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BENEFICIARIES

REPORT TO CONGRESS

No. 92-5

May 1992

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PREFACE

This report was submitted to Congress in accordance with the Commission's responsibility under the Omnibus Budget Reconciliation Act of 1989 to comment on the Department of Health and Human Services Secretary's annual report to Congress on "Monitoring Changes in the Use of, Access to, and Appropriateness of Part B Medicare Services." However, the significant delay in the release of the Secretary's report prevented inclusion of the Commission's comments in this report. The Commission will send a subsequent communication to the Congress with detailed comments on the Secretary's report.

Christopher Hogan, Ph.D., was the Commission staff member principally responsible for the analysis in this report. Ernest Moy, M.D., and Nguyen X. Nguyen, Ph.D. also contributed to this report.

The Commission's Advisory Panel on Access provided guidance through all phases of this project. Their contribution to this report cannot be overestimated. The Commission would also like to thank the following individuals for their help on various aspects of this report: Robert Moore, Director of the Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration, provided claims and enrollment data. He and his staff produced and documented files spanning hundreds of tape cartridges for this report, and that effort is greatly appreciated. Arlene Turner of Social and Scientific Systems provided outstanding computer programming support. Paul Menick and Jansen Davis of Social and Scientific Systems also assisted in programming tasks. Richard C. Lee, Director of the Office of Shortage Designation, Health Resources and Services Administration, supplied the information used to identify beneficiaries in Health Professional Shortage Areas. Jolene Hall of the Prospective Payment Assessment Commission contributed valuable guidance in developing the hospital outpatient bill data. Ron Boheim of Abt Associates provided expert advice on matching claims and enrollment data.

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EXECUTIVE SUMMARY

The Omnibus Budget Reconciliation Act of 1989 (OBRA89) called for three substantial changes in the way Medicare pays physicians. The Medicare Fee Schedule will shift payments toward primary care services and toward rural areas. The Volume Performance Standard (VPS) will constrain the growth of expenditures by reducing fee updates if outlays exceed targeted levels. Limits on balance billing will provide additional financial protection for beneficiaries.

The need for careful and timely monitoring of the impacts of these payment changes was recognized by the Congress. OBRA89 directs the Secretary of Health and Human Services to report to the Congress annually on changes in beneficiaries' use of services and access to care. The Commission is to comment on the Secretary's report and to offer recommendations regarding access to care.¹

In response to this congressional mandate, and to assure the Congress that methods for monitoring access are adequate, the Commission has developed its own strategy for monitoring access to care. The Commission convened an Advisory Panel on Access (the Panel), consisting of physicians, beneficiary advocates, and researchers with expertise in the measurement of access to care. With the help of the Panel, the Commission adopted a strategy of tracking use and access for populations most vulnerable to a loss of access to care.

This year's report on access focuses on analysis of Medicare claims data from the period prior to implementation of the Medicare Fee Schedule. Data from this baseline period were used to evaluate different measures of access to care and to provide a profile of Medicare beneficiaries' use of services prior to payment reform. In subsequent reports, data from 1992 and later years will be contrasted with these baseline levels of utilization to assess the impact of the fee schedule on access to care.

The Commission's next report on access to care will utilize several other sources of information in addition to claims data. The first round of Medicare's Current Beneficiary Survey will provide detailed information on the health care access and service use of 12,000 beneficiaries. Results from a survey of physicians will also be presented: the Commission has contracted with a major polling organization to survey 1,000 physicians regarding their reactions to the Medicare Fee Schedule.

¹ Significant delay in the release of the Secretary's report prevented inclusion of the Commission's comments in this report. The Commission will send a subsequent communication to the Congress with detailed comments on the Secretary's report.

Methods and Findings

Medicare claims data for approximately 1.5 million beneficiaries for the period 1986 through 1990 were used to calculate baseline levels of service utilization prior to implementation of the fee schedule. Numerous populations thought to be vulnerable to access problems were identified. Age- and sex-adjusted utilization rates were used to profile service use and outcomes.

Problems obtaining access to care were most evident for three populations: black beneficiaries, beneficiaries in urban high-poverty areas, and beneficiaries in urban Health Professional Shortage Areas (HPSAs). These three populations exhibited low use of services with poor health outcomes. Beneficiaries in these populations were 5 to 9 percent less likely ever to see a physician during the year, while use of preventive care was 12 to 46 percent lower than for other beneficiaries. Reliance on hospital outpatient departments and emergency rooms for primary care services was nearly double that for the remainder of the beneficiary population. Finally, outcomes were poor: outlier hospital stays were more than 50 percent higher, and mortality rates ranged from 13 percent to 16 percent above the average for other beneficiaries (Table ES-1).

Table ES-1. Comparison of Utilization and Outcomes for Selected Vulnerable Populations, 1986

Service	Percent Difference Between Vulnerable Population and Remainder of Beneficiaries					
	Black	Urban Poverty	Urban HPSA	Rural Area	High Fee	Low Fee
Any Services Use	-8.8	-7.9	-4.8	-2.6	2.9	-2.6
Total Service Use	-7.9	0.2 ^{NS}	6.1	-18.7	21.3	-16.6
Preventive Care	-45.6	-38.0	-11.9 ^{NS}	-30.5	17.5	-37.6
ER/OPD Visits	92.3	88.6	77.6	-17.3	-19.2	-19.4
Outlier Hospital Stay	62.9	59.2	48.6	-26.4	28.5	-25.9
Mortality Rate	15.8	14.8	12.9	-0.7 ^{NS}	-7.9	1.7 ^{NS}

Source: PPRC analysis of 1986 Medicare program data.

Note: NS - not significant (differences below two standard errors).

Beneficiaries in rural areas had substantially lower service use, but outcomes as captured by mortality rates and serious hospitalizations were no worse than for urban areas. Physician service use was almost 19 percent lower in rural than in urban areas.

Hospitalization rates were higher overall, but there were 26 percent fewer outlier cases, and 17 percent fewer hospital outpatient department visits for primary care services. Finally, the overall mortality rate was insignificantly different from the mortality rate in urban areas. This pattern of lower service use but no worse outcomes held for remote rural areas and rural HPSAs (Table ES-1). However, in rural poverty areas and in the rural South, outcomes were not quite as good as in other rural areas.

Areas with high and low fee levels showed rates of service use that were respectively higher and lower than average. Areas where customary, prevailing, and reasonable (CPR) fees were substantially above the Medicare Fee Schedule had higher use of almost all services, while the reverse held true for areas with low CPR fees. However, indicators of the process and outcomes of health care exhibited no consistent pattern. Both types of areas showed little reliance on hospital outpatient departments for primary care services. Areas with high CPR fees had more outlier hospitalizations but lower overall mortality, while the reverse was true of areas with low CPR fees (Table ES-1).

Finally, patterns of utilization appeared reasonably stable during this period. This stability of the data will make it easier to identify any substantive changes in utilization caused by the introduction of the Medicare Fee Schedule.

Potential Policy Actions

These findings may be relevant to several aspects of federal health care policy. First, the apparent differentials in access to care within the insured Medicare population show the limits of insurance alone. The Secretary might consider ways to enlarge the roles of education, outreach, and communication within the Medicare program to improve access to care for these populations.

Second, these results may have implications for expanding the role of community health centers, the National Health Service Corps, and other means by which the federal government steps in directly to fill gaps in the health care delivery system. Taxpayers are already at risk for the health care expenditures of Medicare beneficiaries. Higher mortality rates, excess outlier hospital stays, and increased use of hospital emergency rooms add to Medicare's costs. If federal programs can reduce poor outcomes for the disadvantaged elderly, some of the costs of these programs may be recouped through reduced Medicare outlays.

Finally, additional research is needed to understand the reasons for these apparent differences in access to care. Only by understanding the nature of the barriers -- insufficient supply of providers, lack of information, lack of community or support services, discrimination, or inability to pay - can rational approaches be developed to increase access. The Health Care Financing Administration (HCFA) recently solicited proposals in this area. Funds should be made available to finance the best of the proposed research, and this may require an increase in HCFA's research budget.

THE COMMISSION'S REPORT

Medicare physician payment reform was enacted with four principal goals: increasing the equity of payment among physicians, constraining the rate of growth in Part B outlays, ensuring beneficiary financial protection, and securing adequate access to health care. With this balanced set of goals, the gains that will accrue from restructuring Medicare payments will be shared by physicians, taxpayers, and beneficiaries.

The tools to achieve three of these four goals were provided in the payment reform package. First, the Medicare Fee Schedule would increase equity of payment across services, specialties, and localities by basing fees on resource costs. This removes the often-irrational payment differentials that developed under decades of customary, prevailing, and reasonable charge limits. Second, the Volume Performance Standard process would constrain expenditure growth by reducing fee updates if outlays exceed targeted levels. Finally, strict and enforceable balance billing limits would provide beneficiaries with substantially greater protection against financial losses arising from health care expenditures.

Regardless of how well the first three goals are achieved, payment reform will be judged successful only if an acceptable level of access to care is maintained. For this reason, questions of access to care will now play a more central role in monitoring, maintaining, and updating Medicare's physician payment system.

BACKGROUND

The Congress recognized the importance of access to care in the Omnibus Budget Reconciliation Act of 1989. OBRA89 directs the Secretary of Health and Human Services to monitor changes in beneficiary utilization of and access to care and to report annually to Congress. The Secretary is to report on:

- changes in the utilization of and access to services, by geographic area, population category, and type of service, and
- possible sources of inappropriate utilization, and factors underlying these changes in utilization and access, including factors relating to different services and to geographic and demographic variations in utilization.

In addition, the Secretary may offer recommendations on measures to address identified patterns of inappropriate utilization, improvements in utilization review, physician education or patient education, steps to address any problems of beneficiary access to care made evident by the monitoring process, and any other matters that the Secretary deems appropriate.¹

The Secretary's first annual report on access to care was issued in 1991. This report was principally a review of HCFA data systems and a broad outline of work to be done to monitor access to care. The Secretary emphasized the need for timely and detailed data and explored many current and planned HCFA data systems. For claims information on all beneficiaries, these included the Common Working File and National Claims History system. For a sample of beneficiaries, information to augment claims data would be collected through the Current Beneficiary Survey (CBS), the Uniform Clinical Data Set (UCDS), and a proposed Medicare Beneficiary Health Status Registry. The report also outlined the Department's proposed efforts to track changes in overall volume, changes in the volume and mix of services across areas, changes in the use of specific types of services, and changes for special population groups. Finally, the report discussed the problems and issues with interpreting these volume changes as evidence of changes in access to care.

OBRA89 directs the Commission to review and comment on the Secretary's report, and to convene a panel of experts to assist it in this undertaking. In response to this Congressional mandate, and to assure the Congress that methods for monitoring access are adequate, the Commission convened an Advisory Panel on Access (the Panel), consisting of physicians, beneficiary advocates, and researchers with expertise in the measurement of access to care. This Panel began meeting in 1991 to suggest methods and to review both the Commission's and the Secretary's efforts in monitoring Medicare beneficiaries' access to care.

The Commission's 1991 report to Congress on access (PPRC 1991b) included both a broad overview of the issues involved in monitoring access and a more detailed workplan incorporating many of the Panel's suggestions on methods for monitoring access. In addition, the report recommended that the Secretary release standardized and timely Part B data summaries, that the Secretary undertake efforts to monitor beneficiary access during the first year of fee schedule implementation, and that the Secretary develop adequate baseline statistics from the period prior to 1992 so that changes in utilization and access to care could be assessed in detail.

¹ OBRA89 calls for the Secretary to produce three related reports on April 15 of each year: one to track trends in outlays and volume (the VPS report), one to track changes in beneficiaries' out-of-pocket costs, and one to monitor changes in utilization and access to care. The Secretary must recommend fee updates in the VPS report. The Secretary may recommend additional changes in any of the reports.

The Commission's Strategy for Claims Data Analysis

This year's report on access focuses on analysis of Medicare claims data from the period prior to implementation of the Medicare Fee Schedule. Data from this baseline period are used to evaluate different measures of access to care and to provide a profile of Medicare beneficiaries' use of services prior to payment reform.

In subsequent reports, data from 1992 and later years will be contrasted with these baseline levels of utilization to assess the impact of the fee schedule on access to care. In addition to the claims data, subsequent reports will include analysis of other sources of information including the Current Beneficiary Survey and the Commission's survey of physicians.

Tracking Trends in Utilization. The first step in using claims data to monitor access to care is to be able to track trends in utilization per beneficiary for specific procedures and health care events across tightly defined beneficiary populations. To achieve this, consistent and detailed claims data must be obtained both prior to and after the implementation of payment reform.

Nearly complete Medicare claims and enrollment information for roughly 1.5 million beneficiaries has been acquired for the years 1986 through 1990. These beneficiaries are drawn from HCFA's standard 5 percent sample, an accurate representation of the entire beneficiary population. Information available includes an abstract of each hospital discharge, a bill for each Part B physician service, a bill for each use of a hospital outpatient department, and enrollment information for each beneficiary in the sample.

These data allow significant subpopulations of Medicare beneficiaries to be identified. For example, utilization may be calculated by beneficiary age, race, and sex, and for a wide variety of geographic areas such as rural areas, inner city areas, and Health Professional Shortage Areas. These data also allow numerous utilization measures to be constructed, including counts of individual procedures, measures of total quantity of services, and indicators based on entire episodes or patterns of care.

Attributing Changes to the Effects of Payment Reform. The second step in using claims data to monitor access to care is to be able to attribute changes in utilization to the effects of payment reform. The goal is to separate out the effects of payment reform from other factors such as preexisting trends, changes in technology, and other changes in the practice of medicine. To achieve this, various control groups must be identified that are relatively unaffected or are affected differently by payment reform. These control groups may be identified using either Medicare data or data from other payers.

Within the Medicare beneficiary population, control groups may be constructed by taking advantage of variation in the change in fee levels across geographic areas that is expected

to occur with the payment reform. For a specific procedure, the change in utilization in areas with sharp fee reductions could be contrasted to the change in utilization in areas with only slight fee reductions or fee increases. If reduced fees affect use, the largest changes should occur in areas with substantial fee reductions. If reduced fees do not affect use, both types of areas should show similar changes in utilization based on existing trends, introduction of new technologies, and ongoing changes in the practice of medicine.

A second approach to finding good control groups is to track utilization for populations other than Medicare beneficiaries. While the Medicare Fee Schedule may have an impact on both pricing and service delivery outside the Medicare program, its first and primary impact should be on Medicare beneficiaries' utilization of services. To some degree, then, contrasts between Medicare and non-Medicare populations may show whether fee changes have affected the delivery of services to Medicare beneficiaries.²

Interpreting Changes in Terms of Access to Care: Vulnerable Populations and Indicators of Access. The third and most difficult step in using claims data to monitor access to care is to interpret changes in utilization in terms of changes in access. For example, a reduction in utilization does not by itself indicate whether needed and appropriate services have been forgone, or whether there has simply been a decline in the level of inappropriate care. For many procedures, indications are sufficiently equivocal that a change in utilization may never have an unambiguous interpretation as a change in access to care.

The Commission has adopted a general strategy of tracking tightly targeted utilization measures for those vulnerable populations who are most at risk for reductions in access to care. By examining utilization rates for populations whose access is already thought to be relatively restricted, and by considering selected procedures or medical events, the Commission hopes to be able to interpret changes in utilization in terms of changes in access to care.

The vulnerable populations include individuals with special health care needs or few financial resources, individuals living in areas of poverty or provider shortage, or beneficiaries who must travel substantial distances to receive care (Table 2). In each case, barriers exist that may reduce access to needed care.

Some measures of access may be constructed from data on beneficiaries' utilization of health care services. Broad summary measures include the total amount of care used, total number of primary care visits, and an indicator for any use of health care during the year. More focused measures include the use of preventive care, total quantity of high-

² While the Commission has found reasonable sources of private-sector price data, timely and detailed data on trends in utilization per capita are much more difficult to obtain. Commission work with private sector data is summarized in its 1992 Volume Performance Standards report (PPRC 1992c).

technology services used, and use of specific medical and surgical service groups such as cardiac care. Finally, hospital admission for selected conditions, admission to the hospital on an emergency basis, outlier hospital stays, and excess mortality are indicators of poor process and outcome of health care that may result from inadequate access to care.

Other measures of access center around providers rather than beneficiaries. Public urban hospitals and clinics are generally thought to be providers of last resort for many populations. Use of such hospital outpatient departments (OPDs) as a source of primary care could indicate difficulty in obtaining access to private physician offices. Similarly, an increased concentration of Medicare services among fewer physicians might indicate reduced access to mainstream health care. However, tracking the number of physicians serving Medicare beneficiaries appears difficult given historical and current data reporting practices.³

Table 2. Size of Vulnerable Populations, 1986

	Number of Beneficiaries In Sample	Percent of Sample
Rural (non-MSA) Areas	422,000	28.3
Rural HPSAs	98,200	6.6
Rural ZIP codes, > 30% in Poverty	36,800	2.5
Urban (MSA) HPSAs	59,700	4.0
Urban ZIP codes, >30% in Poverty	46,600	3.1
Black Beneficiaries	127,000	8.5
Dual Eligible/QMB Beneficiaries	162,000	10.9
Old Old Beneficiaries (Over Age 85)	124,000	8.3
Disabled Beneficiaries	213,000	14.3
Areas with highest CPR fees	217,000	14.6
Areas with lowest CPR fees	224,000	15.0
All Beneficiaries	149,000	100.0

Source: PPRC analysis of Medicare enrollment data, 1986.

Notes: Populations overlap considerably. Percentages cannot be meaningfully added together.
Disability status is based on original reason for entitlement to Medicare benefits.
High and Low fee areas refer to 1990 fees relative to the Medicare Fee Schedule.

³ The use of the Unique Provider Identification Number (UPIN) to track services across physicians is discussed briefly in the final section of the report.

Strengths and Limitations of Claims Data for Monitoring Access

Claims data have several strengths and weaknesses relative to other sources of information on beneficiaries' access to care. This section briefly outlines the strengths and weaknesses of claims data.

Statistical Power. Probably the most important advantage of claims-based analysis is the ability to track utilization for large numbers of beneficiaries. Large samples are needed to obtain stable estimates of utilization for selected subpopulations or for rare health care events. The stability of the resulting estimates gives this form of analysis considerable statistical power, meaning that analysis can reliably detect relatively small changes in utilization rates.

No sample of beneficiaries, however carefully chosen, will ever exactly represent the entire beneficiary population. Two seemingly identical random samples of beneficiaries might show two quite different utilization rates due simply to the "luck of the draw" in picking the individual beneficiaries in the samples.

The size of this sampling error creates a limit on the smallest underlying change in utilization that may be reliably detected. A change in utilization that is the same magnitude as the sampling error will be lost amidst the random fluctuations caused by sampling. This problem gets worse for smaller populations or rarer health care events.

Larger samples provide more stable utilization estimates and therefore are capable of reliably detecting much smaller changes in health care events. For a numerical example, suppose that the average mortality rate for beneficiaries is 5 percent per year. If numerous samples of 1000 beneficiaries were drawn, the mortality rate in the samples might range from 3.6 to 6.4 percent. In samples of 100,000 beneficiaries, by contrast, the range of observed mortality rates would typically be from 4.86 to 5.14 percent. A very significant one percentage point jump in the mortality rate would be obscured by sampling error in the small sample but would be instantly recognizable in the large sample.⁴

Reliability, Objectivity, and Detail. Claims data provide reliable and objective information about service use. They do not depend on individuals' recall of events, or on willingness or ability to participate in a survey. This is a particular advantage for the Medicare population, in which complex health care problems, disability, and mortality are relatively common and might all generate recall or non-response bias in surveys.

⁴ The ranges in this example are two standard deviations around the mean.

In addition, Medicare claims are relatively comprehensive for most beneficiaries. Hospital and physician services, outpatient services, home health services, and purchase and rental of durable medical equipment all generate claims that allow use of these services to be tracked. Claims have detail sufficient to track types of physician contacts, place of contact, individual services, and total quantity of service.

There are, however, gaps in the claims that cannot easily be filled. First, claims are not filed for enrollees in health maintenance organizations. This segment of the Medicare population must be omitted from any analysis based on claims data. A second omission from the claims data is for services for which beneficiaries failed to submit claims to Medicare, typically because they believed they would not exceed their annual deductible. Starting in 1989, physicians must file all Medicare claims, largely eliminating this source of error. A third type of omission is for services not covered by Medicare, most notably, drugs not administered by physicians, and nursing home care.⁵ No claims will be available for these services. Finally, some beneficiaries may have coverage in addition to Medicare, and so only part of their claims may appear in Medicare files.

Other potentially significant gaps are due to the manner in which claims are submitted and processed. First, prior to 1991, detailed Part B claims data were made available by the carriers only on an annual basis. Claims incurred during a year but processed after March 31 of the following year were not included in the files. This results in a small percentage of claims being omitted from the files each year. A second potentially important gap is for care delivered by interns and residents, for which a Part B bill may not be submitted. To the extent that different segments of the beneficiary population receive different proportions of their care from interns and residents, the Part B bills will show a slightly inaccurate picture of total utilization.⁶

Lack of Health Status and Other Information. The principal drawback of claims-based analysis is that no information is available on many important determinants of health care use. For example, information on chronic conditions, income, and insurance coverage is not available. In addition, detailed measures of the various dimensions of access are lacking: waiting time, difficulty in finding a physician, presence of a usual source of care, availability of family caretakers and other support services. Finally, claims data provide only the crudest outcome measures such as death, and miss entirely the less dramatic measures such as disease-specific morbidity.

This lack of information has two significant implications for any analysis of claims data. First, it will always be difficult to interpret utilization rates in terms of access to care, since many of the determinants of health care needs, such as chronic conditions, will not

⁵ Only nursing home care related to acute care is covered under Medicare Part A.

⁶ A rough estimate of the impact of this gap is given for outpatient visits in Appendix B.

be measured. Only the more obvious instances of lack of access may be apparent in an analysis of claims data. Second, even when a lack of access can be inferred, it will be difficult to draw detailed policy recommendations from claims analysis alone. Access problems caused by lack of income, an absence of providers, or insufficient social support services might require very different types of solutions. Analysis of claims data may provide only an outline of the problem and may not illuminate the underlying causes for lack of access to care.

UTILIZATION AND ACCESS, 1986 - 1990

The Commission's analysis of utilization and access in the baseline period begins with an analysis of 1986 utilization by various beneficiary populations. Many of these populations indeed have substantially lower than average rates of service use.

Two series of contrasts stand out from these population profiles. First, the populations that most obviously appear to have problems in obtaining access are black beneficiaries, beneficiaries living in urban HPSAs, and beneficiaries living in urban poverty areas. These populations showed both substantially less likelihood of any physician contact, typically lower utilization rates, and worse health outcomes. Other populations showed wide variation in service use but did not show both low use and poor outcome. This may be due in part, however, to the relatively insensitive outcome measures available and to the lack of health status or morbidity data from which to make a determination of differential need for care.

A second interesting population contrast arose from an examination of geographic areas where CPR fees were low relative to the Medicare Fee Schedule, and areas where fees were high relative to the fee schedule. Areas with low fees had substantially lower service use in almost every category, while areas with high fees had substantially higher service use. To the extent that there is concern over access problems developing in the long run where fees are reduced, this is a reassuring finding: modest reductions in service use would not depress total utilization below the national average.⁷

Finally, the patterns of differential service use observed in 1986 were tracked over time. With a few exceptions, the differences observed in 1986 persisted through 1990.

⁷ In the short run, utilization may actually increase in areas where fees are reduced (PPRC 1991a, Chapter 6).

Description of Service Use by Vulnerable Populations

In this section, each vulnerable population was profiled relative to the remainder of Medicare beneficiaries to highlight differences in utilization patterns. Data are directly standardized for the age-sex mix of the beneficiary populations, so that differences should typically be interpreted as differences in age-sex adjusted use rates.⁸ Results are summarized in Table 3, with more detailed tabulations given in Appendix B. Discussions of individual populations are presented below.

Beneficiaries in Rural Areas. Health care for the rural elderly has long been an issue for Medicare. Analysis of congressional debate shows that concern for this population's access to care was evident at the inception of the Medicare program (Long and Settle 1984). A study of the rural elderly using National Health Interview Survey (HIS) data⁹ found that they used roughly as much outpatient care and somewhat more inpatient care than the urban elderly, although they tended to have somewhat worse health status (Long and Settle 1984). A more sophisticated analysis of 1977 HIS data showed that the urban elderly received 21 percent more outpatient care than did the rural elderly, but the rural elderly were substantially more likely to be hospitalized (Long and Settle 1984).

The claims data used here showed the same pattern of lower physician services use but higher use of hospital inpatient care as did the more recent HIS data. Rural beneficiaries were only about 3 percent less likely to have any use of services during the year (Figure 1). However, the total quantity of physicians' services provided to rural beneficiaries was almost 19 percent lower than for urban beneficiaries. Hospitalizations, by contrast, were about 9 percent higher.

The mix of physicians' services provided to rural beneficiaries differed substantially from that provided to urban beneficiaries. The most obvious difference is in the role of general practice (GP) and family practice (FP) physicians in rural health care. Rural beneficiaries received 40 to 50 percent more care from GP/FP physicians than did other beneficiaries. This specialty mix was reflected in the services received: for all the major procedure groups shown in Table 3, rural beneficiaries consistently received quantities that were 15 to 50 percent lower than for other beneficiaries. This mirrors the distribution of health care providers: rural areas have less than 30 percent as many specialists per capita as urban areas, versus 65 percent as many primary care physicians per capita as urban areas (OTA 1990, Chapter 10).

⁸ For some populations, direct age/sex adjustment leaves utilization rates essentially unchanged. A discussion of this is provided in Appendix B.

⁹ The HIS is a continuous survey of health and health service use of U.S. households conducted by the U.S. Bureau of the Census (Adams and Benson 1990). The HIS gives a record of health care use stretching back several decades. Published analyses based on HIS data provide a convenient and consistent framework for examining long-term changes in patterns of health care use.

Table 3. Utilization of Services by Various Vulnerable Populations, 1986

Service	All Beneficiaries Rate	Rural Rate	Percent Difference From All Others	Rural HPSA Rate	Percent Difference From All Others	Rural Poverty Areas Rate	Percent Difference From All Others
Any Services							
Total RVUs, All Services	0.836 767.000	0.821 659.000	-2.6 -18.7	0.807 649.000	-3.8 -16.3	0.795 662.000	-5.1 -14.0
Any Primary Care Services							
Total RVUs, Primary Care Services	0.759 122.000	0.748 107.000	-2.0 -15.6	0.7373 108.000	-3.1 -11.9	0.730 114.000	-4.0 -6.1
Total RVUs, Preventive Care	2.850	2.160	-30.5	1.720	-41.2	1.460	-49.3
Total RVUs, Hi-Tech Services	104.000	90.000	-18.1	86.400	-18.1	84.600	-19.2
Total RVUs, with General Practice/Family Practice	79.200	99.700	40.3	112.000	46.0	134.000	72.2
Total RVUs, with Internal Medicine	134.000	102.000	-30.6	94.800	-30.5	100.000	-25.4
Total RVUs, with Surgeon	288.000	252.000	-16.9	245.000	-16.0	251.000	-13.1
Total RVUs, with Medical Specialty	185.000	137.000	-33.2	134.000	-29.1	135.000	-27.4
Total RVUs, ER/OPD Visits	10.900	8.960	-23.5	9.210	-16.7	9.620	-12.2
Number of ER/OPD Visits	0.332	0.288	-17.3	0.301	-9.9	0.322	-3.0 ^{NS}
Total RVUs, EKG	25.900	19.500	-31.4	18.900	-28.4	20.900	-19.5
Total RVUs, Cardiac Ultrasound	7.090	5.030	-36.5	4.660	-35.8	4.840	-32.2
Total RVUs, Cardiac Catheterization	10.300	9.320	-12.7	9.310	-10.1	8.740	-15.4
Total RVUs, Cataract Lens Surgery	46.600	44.400	-6.7	45.400	-3.0 ^{NS}	45.600	-2.3 ^{NS}
Total RVUs, Lower GI Endoscopy	14.500	11.900	-23.6	10.800	-27.3	10.200	-30.5
Total RVUs, Upper GI Endoscopy	8.610	7.570	-16.1	7.620	-12.1	7.800	-9.5
Total RVUs, Radiology	89.700	75.700	-20.6	73.600	-19.1	75.600	-16.1
Total RVUs, CAT Scan	14.400	11.900	-22.7	11.800	-19.5	11.800	-18.4
Total RVUs, MRI	1.270	0.663	-56.0	0.534	-59.5	0.367	-71.5
Number of Visit/ER Services (OPD File)	0.460	0.382	-22.2	0.433	-6.3	0.493	7.3
Discharges, Total	0.340	0.362	9.2	0.386	14.5	0.429	27.1
Discharges, ACS DRGs	0.071	0.081	22.8	0.091	31.6	0.102	46.3
Discharges, Low Variation DRGs	0.017	0.019	19.1	0.019	17.6	0.019	16.0
Admitted through ER	0.133	0.119	-13.5	0.122	-8.5	0.133	0.0 ^{NS}
Outlier, Day or Cost	0.012	0.009	-26.4	0.010	-17.2	0.010	-15.6
Discharged Dead	0.022	0.021	-2.9 ^{NS}	0.022	2.7 ^{NS}	0.025	13.9
Mortality Rate	0.048	0.048	-0.7 ^{NS}	0.048	0.3 ^{NS}	0.049	2.2 ^{NS}

Source: PPRC analysis of 1986 Medicare data.

Note: NS - signifies differences below two standard errors.

RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Table 3. (continued)

Service	Urban HPSA Rate	Percent Difference From All Other	Urban Poverty Area Rate	Percent Difference From All Other	Black Beneficiaries Rate	Percent Difference From All Other
Any Services	0.798	-4.8	0.772	-7.9 ^{NS}	0.769	-8.8
Total RVUs, All Services	811.000	6.1	768.000	0.2 ^{NS}	710.000	-7.9
Any Primary Care Services	0.720	-5.3	0.692	-9.1 ^{NS}	0.693	-9.4
Total RVUs, Primary Care Services	129.000	6.5	118.000	-3.4 ^{NS}	119.000	-2.3
Total RVUs, Preventive Care	2,520	-11.9 ^{NS}	1,790	-38.0	1,610	-45.6
Total RVUs, Hi-Tech Services	107.000	2.3	102.000	-2.5	94.900	-9.6
Total RVUs, with General Practice/Family Practice	76,700	-3.4	71,000	-10.7	80,800	2.1
Total RVUs, with Internal Medicine	155,000	16.7	147,000	10.6	149,000	13.0
Total RVUs, with Surgeon	279,000	-3.4	267,000	-7.8	231,000	-21.2
Total RVUs, with Medical Specialty	207,000	12.6	209,000	13.6	181,000	-2.0
Total RVUs, ER/OPD Visits	18,100	70.8	19,000	77.9	18,600	82.2
Number of ER/OPD Visits	0.571	77.6	0.609	88.6	0.592	92.3
Total RVUs, EKG	28,600	11.1	25,300	-2.1 ^{NS}	24,100	-7.3
Total RVUs, Cardiac Ultrasound	9,310	33.0	8,930	27.0	8,050	15.1
Total RVUs, Cardiac Catheterization	9,250	-10.5	8,690	-16.0	6,310	-40.8
Total RVUs, Cataract Lens Surgery	46,000	-1.4 ^{NS}	44,200	-5.5 ^{NS}	33,900	-28.9
Total RVUs, Lower GI Endoscopy	13,100	-10.2	11,500	-21.5	11,300	-23.7
Total RVUs, Upper GI Endoscopy	10,500	22.9	10,100	18.2	9,240	7.9
Total RVUs, Radiology	95,900	7.1	92,200	2.8 ^{NS}	82,500	-8.7
Total RVUs, CAT Scan	15,800	10.1	15,300	6.7	14,400	-0.4 ^{NS}
Total RVUs, MRI	0.982	-23.2	0.842	-34.3	0.727	-45.1
Number of Visit/ER Services (OPD File)	0.965	120.0	1.130	157.6	1.040	157.5
Discharges, Total	0.372	9.8	0.366	8.0	0.357	5.5
Discharges, ACS DRGs	0.082	17.1	0.080	14.2	0.078	11.2
Discharges, Low Variation DRGs	0.014	-14.6	0.014	-18.4	0.011	-37.3
Admitted through ER	0.166	26.6	0.167	26.6	0.163	25.8
Outlier, Day or Cost	0.017	48.6	0.018	59.2	0.018	62.9
Discharged Dead	0.027	23.5	0.028	27.9	0.025	18.6
Mortality Rate	0.054	12.9	0.055	14.8	0.055	15.8

Source: PPRC analysis of 1986 Medicare data.

Note:

NS - signifies differences below two standard errors.

RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Table 3. (continued)

Service	Dual Eligible Rate	Percent Difference From All Other	Old Old Rate	Percent Difference From All Other	Disabled Rate	Percent Difference From All Other
Any Services						
Total RVUs, All Services	0.903 946.000	9.1 26.8	0.943 865.000	14.0 14.1	0.873 1010.000	2.5 ^{NS} 18.6
Any Primary Care Services						
Total RVUs, Primary Care Services	0.847 179.000	13.2 56.2	0.862 153.000	14.9 28.5	0.805 160.000	5.3 34.8
Total RVUs, Preventive Care	1.650 108.000	-45.3 4.3	1.030 91.500	-65.8 -13.1	2.420 131.000	-17.4 11.1
Total RVUs, Hi-Tech Services						
Total RVUs, with General Practice/Family Practice	145.000	101.5	123.000	63.6	106.000	42.8
Total RVUs, with Internal Medicine	170.000	30.9	164.000	25.4	186.000	19.7
Total RVUs, with Surgeon	298.000	3.5	314.000	9.6	351.000	12.4
Total RVUs, with Medical Specialty	224.000	24.2	158.000	-16.0	263.000	16.7
Total RVUs, ER/OPD Visits	20.300	105.6	15.800	50.4	17.400	64.3
Number of ER/OPD Visits	0.626	109.6	0.442	37.4	0.530	64.2
Total RVUs, EKG	29.500	16.0	25.700	-0.7 ^{NS}	33.700	32.3
Total RVUs, Cardiac Ultrasound	8.220	18.0	6.310	-11.9	10.200	36.7
Total RVUs, Cardiac Catheterization	8.660	-16.8	2.390	-78.2	15.900	52.9
Total RVUs, Cataract Lens Surgery	47.800	2.2 ^{NS}	63.500	40.6	56.500	18.6 ^{NS}
Total RVUs, Lower GI Endoscopy	11.600	-21.4	10.200	-31.8	15.600	5.3 ^{NS}
Total RVUs, Upper GI Endoscopy	12.200	48.5	9.290	8.7 ^{NS}	12.800	47.0
Total RVUs, Radiology	102.000	15.3	84.300	-6.5	113.000	21.4
Total RVUs, CAT Scan	16.900	19.6	13.400	-7.8	18.700	29.7
Total RVUs, MRI	1.040	-20.1	0.348	-74.2	2.000	65.8
Number of Visit/ER Services (OPD File)	1.050	165.5	0.459	-0.3 ^{NS}	0.758	70.4
Discharges, Total	0.536	66.6	0.512	57.8	0.513	45.3
Discharges, ACS DRGs	0.138	113.4	0.124	88.8	0.129	96.5
Discharges, Low Variation DRGs	0.019	17.0	0.025	61.4	0.021	29.6
Admitted through ER	0.233	88.8	0.246	100.3	0.211	60.9
Outlier, Day or Cost	0.021	92.8	0.019	71.8	0.023	87.1 ^{NS}
Discharged Dead	0.035	69.0	0.057	205.4	0.032	47.5 ^{NS}
Mortality Rate	0.073	62.5	0.149	281.9	0.061	31.2

Source: PPRC analysis of 1986 Medicare data.

Note: NS - signifies differences below two standard errors.

RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Table 3. (continued)

Service	High Fee Areas Rate	Percent Difference From All Other	Low Fee Areas Rate	Percent Difference From All Other
Any Services	0.857	2.9	0.818	-2.6
Total RVUs, All Services	902.000	21.3	656.000	-16.6
Any Primary Care Services	0.781	3.4	0.744	-2.4
Total RVUs, Primary Care Services	145.000	23.5	107.000	-13.9
Total RVUs, Preventive Care	3.270	17.5	1.890	-37.6
Total RVUs, Hi-Tech Services	119.000	17.4	88.800	-17.0
Total RVUs, with General Practice/Family Practice	82.100	4.2	100.000	32.3
Total RVUs, with Internal Medicine	148.000	12.4	107.000	-23.1
Total RVUs, with Surgeon	333.000	18.6	250.000	-15.5
Total RVUs, with Medical Specialty	239.000	35.9	136.000	-29.8
Total RVUs, ER/OPD Visits	9.550	-14.4	8.670	-23.5
Number of ER/OPD Visits	0.275	-19.2	0.275	-19.4
Total RVUs, EKG	30.500	21.8	18.700	-31.0
Total RVUs, Cardiac Ultrasound	7.970	14.9	4.820	-35.6
Total RVUs, Cardiac Catheterization	12.000	19.9	8.630	-18.4
Total RVUs, Cataract Lens Surgery	62.200	41.4	44.500	-5.3
Total RVUs, Lower GI Endoscopy	17.100	21.3	12.100	-19.1
Total RVUs, Upper GI Endoscopy	9.600	13.8	7.880	-9.8
Total RVUs, Radiology	106.000	21.8	74.200	-19.8
Total RVUs, CAT Scan	17.200	23.5	11.600	-22.4
Total RVUs, MRI	2.090	85.0	0.649	-52.8
Number of Visit/ER Services (OPD File)	0.422	-9.5	0.372	-21.7
Discharges, Total	0.329	-3.8	0.350	3.6
Discharges, ACS DRGs	0.065	-8.6	0.077	10.2
Discharges, Low Variation DRGs	0.014	-17.8	0.019	14.5
Admitted through ER	0.122	-9.3	0.118	-12.7
Outlier, Day or Cost	0.014	28.5	0.009	-25.9
Discharged Dead	0.021	-6.1	0.022	1.4 ^{NS}
Mortality Rate	0.045	-7.9	0.049	1.7 ^{NS}

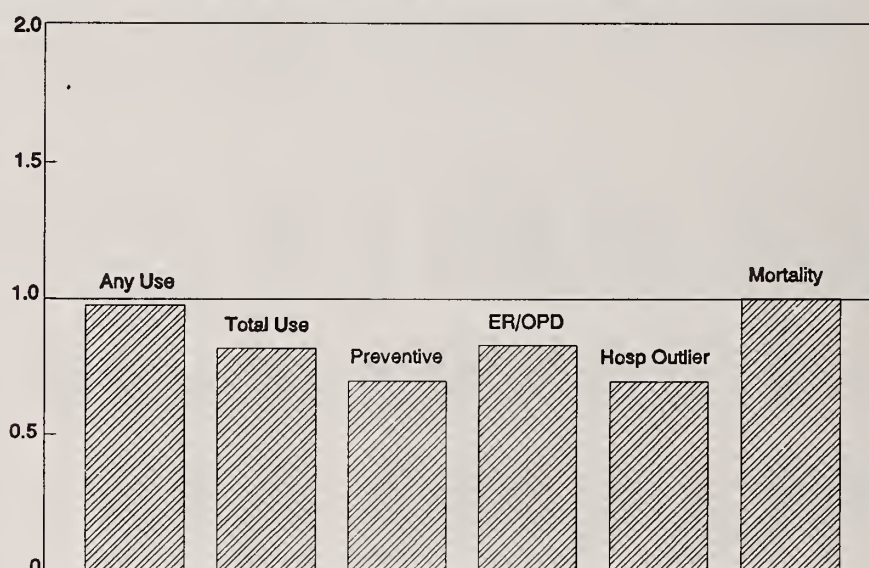
Source: PPRC analysis of 1986 Medicare data.

Note: NS - signifies differences below two standard errors.

RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Hospital inpatient service mix for rural beneficiaries also differed from that of urban beneficiaries. Although they were hospitalized more often, rural beneficiaries appeared to be less severely ill on average: less likely to be admitted on an emergency basis, and substantially less likely to be an outlier case. This may again relate to differences in the availability of provider resources. On average, rural areas have excess hospital capacity, and rural hospitals typically have substantially more excess beds and lower occupancy rates than urban hospitals (OTA 1990, Chapter 5). This ready availability of beds combined with a relative scarcity of physicians and facilities such as free-standing surgical centers might result in different criteria for admission to the hospital in rural areas than in urban areas.

Figure 1. Use of Services and Mortality: Ratio of Beneficiaries in Rural Areas to Others, 1986



Source: PPRC analysis of 1986 Medicare program data.

Admissions for ambulatory care sensitive diagnosis related groups (ACS DRGs) (Billings and Hasselblad, 1989) were also substantially higher in rural areas. ACS DRGs are conditions for which outpatient care may prevent or substitute for hospitalizations.¹⁰ ACS DRGs appear to be markers for inadequate primary care among the urban non-elderly population, but function less well in this regard when applied to the urban elderly (Billings and Hasselblad 1989). In this case, hospitalization for ACS DRGs may be reflecting

¹⁰ These include conditions such as chest pain, pneumonia, bronchitis, and chronic obstructive pulmonary disease.

urban/rural differences in physician and hospital supply, with a substitution of relatively plentiful inpatient resources for relatively scarce outpatient resources.

Perhaps the most interesting finding was that rural beneficiaries had no worse outcomes as captured by mortality rates and outlier hospitalizations, despite having substantially lower use of physicians' services overall. While this analysis cannot explain fully a lack of poor outcomes, the data suggest that continuity of care may be somewhat better in rural areas: beneficiaries in rural areas are much less likely to use hospital emergency rooms (ERs) and outpatient departments for primary care services.

Two additional subcategories of rural areas were profiled separately (Appendix B). These include the rural South and frontier rural counties, counties with fewer than six persons per square mile.

Utilization profiles for these areas were in most respects similar to rural areas in general. Compared to all rural areas, the rural South showed somewhat higher overall use and somewhat higher dependence on GP/FP physicians. In addition, outcomes as measured by emergency hospital admissions, outlier stays, in-hospital mortality, and overall mortality rate were not as good in the rural South as in other rural areas. For frontier rural areas, patterns of service use and outcomes were quite similar to rural areas as a whole.

Beneficiaries in HPSAs. Health Professional Shortage Areas are designated by the Office of Shortage Designation in the Health Resources and Services Administration of the Public Health Service. Areas qualify as HPSAs primarily on the basis of a low physician-to-population ratio. HPSAs can include entire counties, parts of counties, selected populations such as Medicaid, or other entities. Beneficiaries in HPSAs were identified via a complex crosswalk from HPSA locations to county and ZIP code information on Medicare enrollment files.¹¹

As their name implies, the central access concern in HPSAs is the availability of health care personnel. Indeed, Medicare currently pays a 10 percent bonus payment for physicians' services provided in these areas.¹² These payments are meant to help retain and attract physicians.

Because of the substantially different patterns of health care in rural and urban areas noted above, rural and urban HPSAs were profiled separately. Broadly speaking, rural

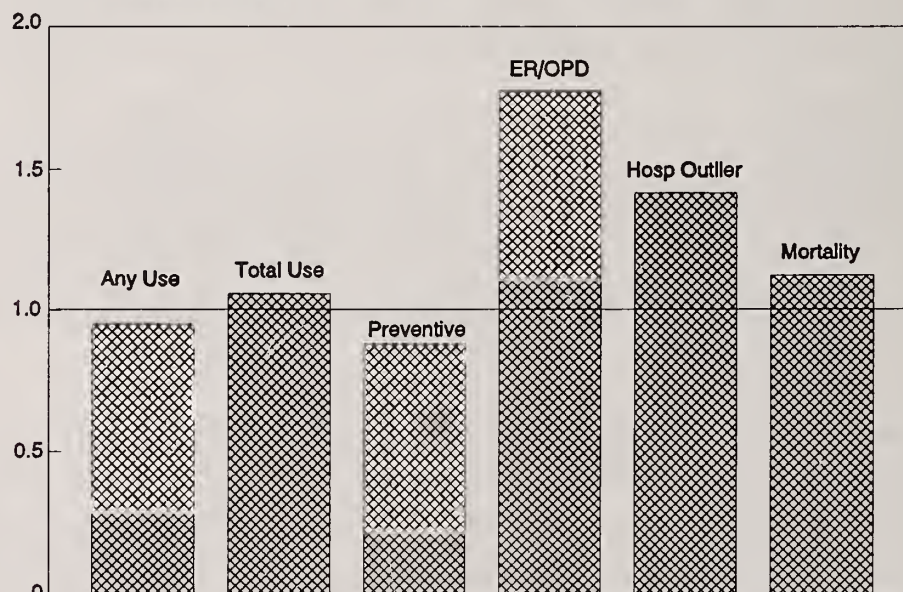
¹¹ Counts of beneficiaries in HPSAs may be somewhat low because not all HPSAs could be matched for this analysis. This is discussed in Appendix B.

¹² The additional payment is 10 percent of the 80 percent of the bill paid directly by Medicare, or 8 percent of the allowed charge. Chapter 5 of the Commission's *Annual Report to Congress 1992* (PPRC 1992a) provides a more complete discussion of shortage areas.

HPSAs resembled rural areas in general. Utilization was low for almost all services, and there was a heavy reliance on GP/FP physicians. There was also a low reliance on hospital OPDs for primary care, lower likelihood of admission on an emergency basis, and no increase in mortality rates.

Urban HPSAs, by contrast, differed in some respects from urban areas in general. First, beneficiaries living in HPSAs had a substantially lower likelihood of ever seeing a physician during the year (Figure 2). Total service use and utilization by category typically matched utilization by all urban beneficiaries, although use of preventive services was substantially lower. Beneficiaries in urban HPSAs had a heavy reliance on hospital OPDs for primary care, were more likely to have an outlier hospitalization, and had a mortality rate almost 13 percent higher than the national average. Thus, while total service use was similar to urban areas generally, urban HPSAs showed all the markers for poor process and outcome of care: lower likelihood of ever seeing a physician, heavy reliance on hospital OPDs, more outlier hospital stays, and high mortality rates.

Figure 2. Use of Services and Mortality: Ratio of Beneficiaries in Urban HPSAs to Others, 1986



Source: PPRC analysis of 1986 Medicare program data.

Beneficiaries in Poverty Areas. Poverty among the elderly has long been perceived to be a barrier to adequate access to care. HIS data again provide a consistent historical overview of this issue. Davis and Reynolds (1975) examined 1969 HIS data and concluded that individuals from the highest-income families had 25 percent more physician visits and 56 percent more hospital days than did individuals from the lowest-income families. However, analysis of 1974 and 1976 data (Link et al. 1982) found that the income-related disparities in utilization that existed prior to Medicare had been substantially reduced by

1977. This was attributed to the widespread provision of supplemental coverage either privately or through Medicaid, resulting in net insurance coverage that did not vary widely with income. An analysis of 1984 HHS data (Christensen et al. 1987) found that significant income-related utilization differentials persisted: the wealthiest elderly were 5 percent more likely to use services, and, among users, to use 15 percent more physicians' services than the poorest elderly.

In this analysis, beneficiary income could not be directly identified. Instead, beneficiaries in poverty areas were identified using ZIP code level information on population and poverty derived from census data. Data on the percent of population in poverty was merged to Medicare enrollment records to identify beneficiaries living in poverty areas.

As with HPSAs, urban and rural poverty areas were profiled separately. Patterns of care in rural poverty areas largely resembled patterns of care in rural areas generally. The probability of ever seeing a physician was lower, as was total service use. However, compared to other rural areas, there was heavier reliance on hospital outpatient departments for primary care, and slightly higher mortality rates. By contrast, urban poverty areas showed all the markers of poor process and outcomes of care: lower likelihood of ever seeing a physician, substantial dependence on hospital OPDs for primary care, more hospital admissions on an emergency basis, more outlier stays, and a mortality rate almost 15 percent above average (Figure 3).

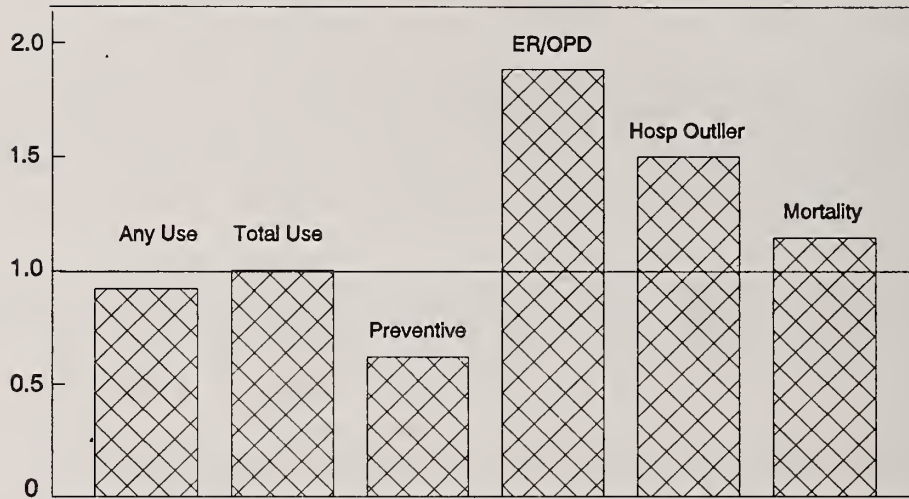
Areas with High and Low Fees. Areas in which Medicare CPR fees were high or low relative to the Medicare Fee Schedule were examined. Areas with high fees will see the greatest fee reductions during implementation of the fee schedule, and so in the long run beneficiaries in these areas might be at risk for reduced access to care. Beneficiaries in areas with low fees might be at risk currently for reduced access to care.

Payment localities with the highest and lowest fees relative to the Medicare Fee Schedule were identified from Commission payment simulations. These localities were then matched to beneficiary county of residence, and 15 percent of beneficiaries living in areas with the highest fees and the lowest fees were identified.

This portion of the analysis provided a surprising and perhaps reassuring snapshot of utilization in these areas. Utilization rates in areas where charge-based fees were high relative to the fee schedule were substantially higher than average in almost all categories of service. Similarly, utilization in areas with low charge-based fees was well below average (Figure 4).¹³

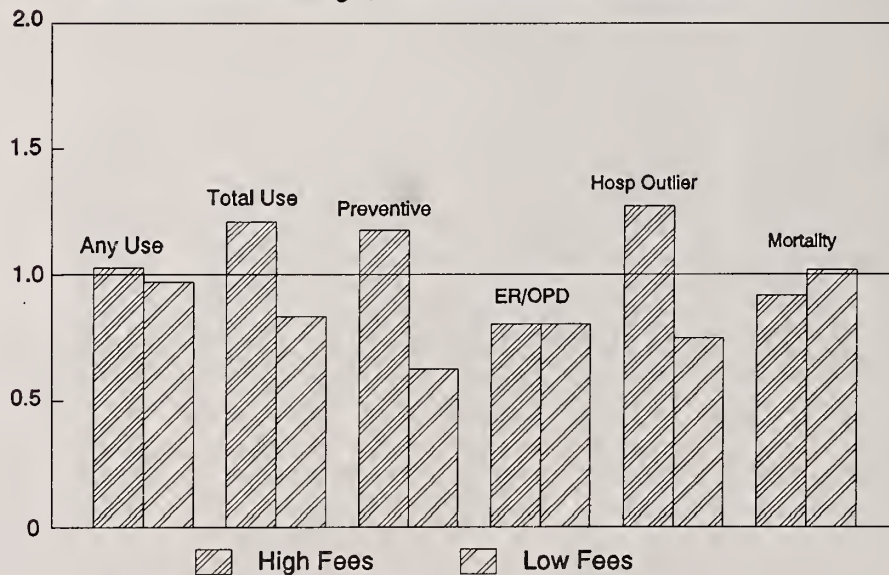
¹³ Because the high-fee/low-fee areas tend to split along urban/rural lines, a separate analysis of 1986 and 1990 data (not shown) was done within urban and within rural areas. The same pattern of utilization emerged: areas with low CPR-based fees had low utilization rates, while areas with high CPR-based fees had high utilization rates.

Figure 3. Use of Services and Mortality: Ratio of Beneficiaries in Urban Poverty Areas to Others, 1986



Source: PPRC analysis of 1986 Medicare program data.

Figure 4. Use of Services and Mortality: Ratio of Beneficiaries in High, Low Fee Areas to Others, 1986



Source: PPRC analysis of 1986 Medicare program data.

Indicators of the process and outcomes of health care varied across these areas. Both types of areas showed little reliance on hospital outpatient departments for primary care services. Areas with high CPR fees had more outlier hospitalizations but lower overall mortality, while the reverse was true of areas with low CPR fees.

Black Beneficiaries. The impact of race on the elderly's access to care is a longstanding area of concern. An analysis of 1969 HIS data (Davis and Reynolds 1975) found that the black elderly received substantially less care than average. This was particularly true in the South, where the white elderly were about 1.7 times more likely to be hospitalized than the black elderly. A more sophisticated study using 1974 and 1976 HIS data (Link et al. 1982) found similar but less dramatic racial differences in inpatient use, but no racial differences in ambulatory care. A study using 1984 HIS data (Christensen et al. 1987) found no statistically significant differences in the probability of any physician visit for the black elderly, but among those who used services, the black elderly had 14 percent more physician contacts than the white elderly.

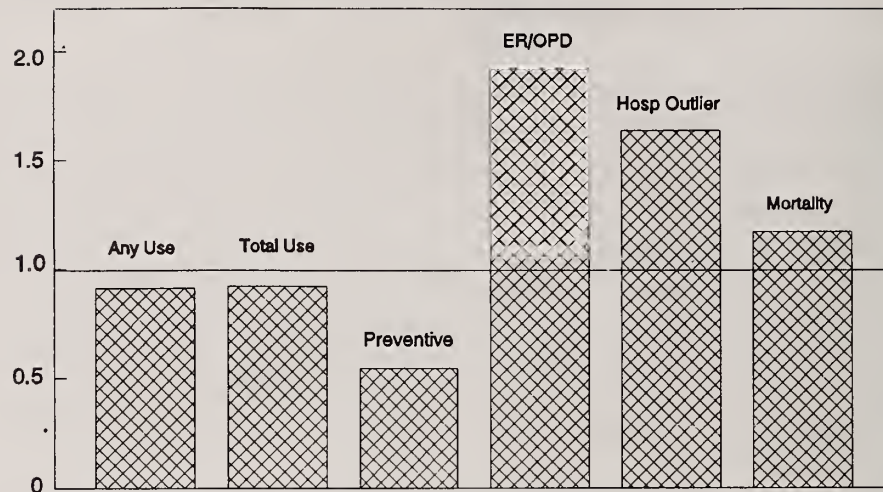
More recently, claims data, medical records, and survey data have been used to examine race-related differentials in access to health care (Goldberg et al. 1992; Stern et al. 1991; Blendon et al. 1989; Ford et al. 1989; Wenneker and Epstein 1989; Oberman and Cutter 1984). These studies indicate that black Americans and the black elderly receive fewer services, particularly complex inpatient procedures.¹⁴

The Commission's analysis of Medicare claims data show that black beneficiaries were approximately 9 percent less likely ever to see a physician during the year and used about 8 percent less medical care on average (Figure 5). This included lower use of almost all services, but a substantially higher use of hospital ERs and OPDs. In terms of outcomes, black beneficiaries were only slightly more likely to be hospitalized, but were substantially more likely to be admitted on an emergency basis, to be an outlier case, and to die in the hospital. In addition, the overall mortality rate for black beneficiaries was almost 16 percent higher than for other beneficiaries.

Based on evidence of regional differentials (Davis and Reynolds 1975), black beneficiaries in the South were analyzed separately (Appendix B). The picture was similar to that for black beneficiaries in general, but tended to be more exaggerated: lower probability of using any service, lower total use of services in almost all categories. Use of hospital OPDs was somewhat lower, as were admission to the hospital on an emergency basis and incidence of outlier hospital stays. The overall mortality rate for these beneficiaries was essentially the same as for all black beneficiaries.

¹⁴ Differences between the studies of HIS data cited above and these studies may be due in part to the level of detail in the data. HIS data rely mainly on the number of physician contacts, while claims data can separate out the nature of the contact, for example, brief office visits versus extensive surgical interventions.

Figure 5. Use of Services and Mortality: Ratio of Black Beneficiaries to Others, 1986



Source: PPRC analysis of 1986 Medicare program data.

Dual Eligible, Old Old, and Disabled Beneficiaries. Dual eligible beneficiaries and Qualified Medicare Beneficiary (QMBs) are those for whom state Medicaid programs purchase Medicare Part B benefits. The old old are defined here as those over age 85, while the disabled were identified by their original reason for entitlement to Medicare benefits.¹⁵

These populations differ substantially from the typical Medicare beneficiary in ways that affect any interpretation of their utilization statistics. The dual eligible category includes many beneficiaries who "spend down" to qualify for Medicaid under a medically needy program. Thus, these individuals may be included in the dual eligible group because they are more severely ill than the typical Medicare beneficiary of the same age and sex. Similarly, the health care needs and outcomes for the old old and the disabled differ substantially from the remainder of the Medicare population. These populations all had substantially higher use and considerably worse outcomes than other beneficiaries.

¹⁵ Use of original reason for entitlement means that some individuals counted as disabled here were actually receiving Medicare benefits on the basis of age rather than disability.

Interpretation of Utilization Profiles in Terms of Access to Care.

This section employs these population profiles to identify populations that appear to have difficulty obtaining access to care. The criterion used is straightforward: lower utilization coupled with worse outcomes is taken as an indication of poor access. This relatively unrefined approach clearly will not detect all barriers to access. However, under this criterion, black beneficiaries, beneficiaries in urban HPSAs, and beneficiaries living in urban poverty areas appear to have poor access to care.

It is difficult to make judgments about access to care based on utilization data alone. Equality of access is usually defined as medical care utilization that reflects only medical needs (Aday and Anderson 1981). But claims data provide little or no information on health care needs. There is no information on health status and little direct information on chronic health problems. Variations in utilization across populations could as easily reflect differences in unnecessary care as they could reflect an absence of needed care.

Data on utilization and outcomes provide somewhat better information than data on service use alone. If all populations had equal access to care, then health status would be expected to drive both use of services and the outcomes of care. Poor health would result in increased service use and worse outcomes, while good health would result in reduced use and better outcomes. Barriers to access, however, might break this positive association, leading to both lower utilization and worse outcomes.

For this analysis, low utilization combined with poor outcomes is taken as the marker for inadequate access to care. This is clearly a broad-brush approach and may fail to detect many significant differences in access to care. Inference would obviously be strengthened by information on health status, chronic conditions, and other factors that affect health care needs and use.¹⁶ Inference would also be strengthened through detailed and specific outcome measures linked to individual types of health care.¹⁷ Unfortunately, health status and detailed outcome information are not available from claims data. Instead, this analysis attempts to make the best use of available information.

Some measures presented in Table 3 are to varying degrees outcomes of the health care delivery system, rather than just measures of utilization. The most unambiguous of these is death. In addition, hospitalization on an emergency basis, an outlier hospital stay, and

¹⁶ For example, an analysis of 1982 HIS data (Newacheck, 1988) found no income-related differences in utilization until health status was taken into account. This analysis would fail to detect access differentials where such health-status adjustment was necessary to reveal underlying patterns of use relative to need.

¹⁷ For example, a study of urban/rural differences in stage of cancer at first detection in Georgia suggested that lack of access to cancer screening contributed to a higher stage in rural areas of that state (Liff et al., 1991).

death during hospitalization are all to some degree indicators of the outcomes of the health care system, or at least indicators of parts of the health care process that should be avoided if possible.

Admission for ACS DRGs (Billings and Hasselblad 1989) is another potential outcome measure. Admission for these conditions was found, in the urban non-elderly population, to be higher for individuals without access to adequate primary care. However, the linkage between these ACS conditions and lack of primary care is more tenuous in the elderly population (Billings and Hasselblad 1989), and so these may be a less reliable outcome indicator for the elderly than for other populations.

Finally, use of hospital outpatient departments for primary care services has been identified as a marker for poor access to care in the urban Medicaid population. While this really reflects differences in the process of health care rather than an outcome as such, higher use of hospital OPDs may be an indicator that beneficiaries are having difficulty obtaining entry to private physicians' offices.

Under the criterion of low use combined with poor outcomes, several of the vulnerable populations seem to show a lack of access to care. Beneficiaries in urban HPSAs, beneficiaries in urban poverty areas, and particularly black beneficiaries show all the markers of poor process and outcome of care: higher mortality rates, heavy reliance on hospital ERs and OPDs for primary care services, higher rates of hospitalization, more likelihood of emergency hospital admission and an outlier stay. All three populations are less likely ever to see a physician during the year. Overall utilization is substantially lower for black beneficiaries and beneficiaries in poverty areas, while use for beneficiaries in urban HPSAs is no higher than in urban areas generally.

Beneficiaries in rural areas and in areas likely to see fee increases under the fee schedule show fewer links from low service use to poor outcomes. These beneficiaries use considerably less medical care than others virtually across the board. Yet, their mortality rates are insignificantly different from those of the general beneficiary population. While they are hospitalized more often, they appear less severely ill and are substantially less likely to be admitted through the hospital emergency room or to be an outlier case. In addition, they are substantially less likely to receive primary care services in hospital outpatient departments.

For the dual eligible, the old old, and the disabled, this profiling of age-sex adjusted utilization rates probably cannot determine whether or not there are problems in access. Underlying differences in morbidity and health status have too strong an effect on

utilization and outcome for any barriers to access to be inferred by this simple method.¹⁸ While cross-sectional comparisons of the dual eligible, old old, and disabled may not lead to conclusions regarding access, analysis of these groups over time may yield significant information. In particular, trends in utilization for these groups will be contrasted in areas with large fee increases and decreases to determine whether payment reform has had a differential impact on them.

Finally, areas with high and low CPR fees show a mixed picture of access to care. Utilization is higher in areas with high fees, and lower in areas with low fees. However, process and outcome measures are mixed. Both areas show a low reliance on hospital outpatient departments for primary care. Areas with high fees have more outliers but a lower mortality rate, while areas with low fees have fewer outliers and a somewhat higher mortality rate.

One final question concerns the overlap among the three populations with access problems: black beneficiaries, beneficiaries in urban HPSAs, and beneficiaries in urban poverty areas. While the overlap is substantial, these populations are distinct. Table 4 shows that about 17 percent of black beneficiaries live in urban HPSAs, and that black beneficiaries comprise nearly 40 percent of beneficiaries in urban HPSAs. Similarly, about 18 percent of black beneficiaries live in urban poverty areas, but black beneficiaries constitute about half of beneficiaries living in those areas. Finally, the overlap of urban HPSAs and urban poverty areas is between 33 and 40 percent.

Stability of Utilization Differentials Over Time

Patterns of utilization must be reasonably stable or smoothly trending in the period prior to introduction of the fee schedule if they are to be useful for assessing the impact of the fee schedule. Utilization differentials that change erratically will provide, at best, weak indicators of changes due to changing fees. By contrast, utilization measures which are stable prior to introduction of the fee schedule but change sharply afterwards convey considerable information about the impact of the change in fees.

Table 5 tracks selected utilization differentials over the period 1986 through 1990. In general, Table 5 gives an impression of stability. For example, the differential in total use between rural and urban beneficiaries varied by only 2 percentage points, from 17 to 19 percent, over this five-year period.

¹⁸ In addition, direct age-sex adjustment of use rates is problematical for some of these populations. See Appendix B for a more detailed explanation.

Table 4. Overlap Between Black Beneficiaries, Urban HPSAs, and Urban Poverty Areas

PERCENT OF POPULATION IN CATEGORY			
	Not Urban HPSA	Urban HPSA	Total
Not Black	88.14	2.53	90.67
Black	7.77	1.56	9.33
Total	95.91	4.09	100.00
	Not Poverty	Poverty	Total
Not Black	89.00	1.66	90.67
Black	7.65	1.68	9.33
Total	96.65	3.35	100.00
	Not Poverty	Poverty	Total
Not Urban HPSA	93.92	1.99	95.91
Urban HPSA	2.73	1.35	4.09
Total	96.65	3.35	100.00

Source: PPRC analysis of a sample of 30,000 1986 enrollment records.

Note: Percentages shown here may not match other tables due to the small sample size used for this analysis.

Most of the utilization rates that show instability in Table 5 fall into two types: those that are understandable in terms of sampling error, and those that appear to be the result of changes in data definitions and reporting. First, use rates for rare health care events or for small populations tend to be more volatile. Over this period, for example, the cataract surgery rate for black beneficiaries varied from 17 percent below to 29 percent below the rate for other beneficiaries. Variations of this sort are to be expected based on sampling theory alone, and, as discussed in the previous section, this sampling error places a limit on the smallest underlying change which may reliably be detected. Because this type of volatility is understandable and varies smoothly with the rarity of the health care event or the size of the population, appropriate statistical tests may be applied to avoid interpreting random fluctuations in use as effects of the implementation of the fee schedule.

Other utilization rates vary in ways that would not be predicted on the basis of the statistical theory. For example, populations spread across few localities may reflect idiosyncracies of the data reporting practices of the Part B carriers serving those localities. The high-fee areas are a case in point, where total physician services utilization appeared

to jump nine percentage points in 1988.¹⁹ Improved Medicare data reporting systems should eliminate many problems of this sort. However, because the cause of the variations is not statistical in nature, traditional statistical tests may provide a relatively poor screen, and variations of this sort may have to be examined on a case-by-case basis.

Implications for Policy

This analysis of 1986 through 1990 data was undertaken to establish baseline levels of utilization for use in measuring the impact of the Medicare Fee Schedule. For this purpose, all that is necessary is to document the existing patterns of utilization and to check their stability. In the course of this analysis, however, it became clear that the existing differentials in utilization and outcome were significant in their own right. This section briefly addresses some of the implications that these current utilization differentials may have for federal health care policy.

First, two findings seem to validate some of the payment reforms enacted in OBRA89. Regarding the Medicare Fee Schedule itself, this analysis showed that beneficiaries in areas where fees were above Medicare Fee Schedule levels received substantially more services than average, and conversely, beneficiaries in areas with low fees had lower-than-average utilization. If there is concern that fee reductions may in the long run lead to reductions in service,²⁰ these results are reassuring. Use rates could fall considerably in high-fee areas yet still remain above the national average. Second, OBRA89 contains several provisions that result in higher payments in HPSAs. The bonus payment for services delivered in HPSAs was expanded from 5 percent to 10 percent, and the bonus was paid for urban as well as rural HPSAs. In addition, new physicians practicing in HPSAs receive the full Medicare Fee Schedule amounts. This analysis suggests that Medicare beneficiaries in urban HPSAs have access problems and that higher payments in these areas might therefore be warranted as a way to improve access.

Second, because this is a study of an insured population, the findings of apparent differentials in access to care show the limits of insurance alone. Education, outreach, and increased communication may be useful ways to enhance health status even within the Medicare population.

¹⁹ This may be related to changes in carrier contracts in several areas in 1988.

²⁰ In the short run, the effect of fee reductions may be an increase in volume of services (PPRC 1991a, Chapter 6).

Table 5. Trends in Utilization Differentials Across Vulnerable Populations, 1986-1990

Service	1986	1987	1988	1989	1990
Rural (Non-MSA) Areas					
Any Services	-2.6	1.3	-0.5	-0.1	0.1
Total RVUs, All Services	-18.7	-17.4	-17.5	-18.7	-17.7
Any Primary Care Services	-2.0	-0.9	0.0	-0.0	0.1
Total RVUs, Primary Care Services	-15.6	-14.5	-14.0	-14.6	-14.3
Total RVUs, ER/OPD Visits	-23.5	-22.2	-20.4	-20.7	-16.8
Total RVUs, Cataract Lens Surgery	-6.7	-4.0	-4.4	-8.1	-5.7
Discharges, Total	9.2	7.2	6.0	6.5	5.4
Admitted through ER	-13.5	-12.2	-11.8	-11.3	-13.2
Outlier, Day or Cost	-26.4	-27.9	-30.3	-38.2	-37.5
Mortality Rate	-0.7	-2.6	-3.0	-2.5	-4.3
Rural HPSAs					
Any Services	-3.8	-2.4	-1.5	-1.2	-0.9
Total RVUs, All Services	-16.3	-14.8	-15.8	-16.0	-15.1
Any Primary Care Services	-3.1	-2.0	-1.1	-1.3	-1.3
Total RVUs, Primary Care Services	-11.9	-11.4	-11.3	-12.1	-11.7
Total RVUs, ER/OPD Visits	-16.7	-14.8	-17.3	-16.0	-12.5
Total RVUs, Cataract Lens Surgery	-3.0	0.6	-3.0	-5.6	-1.5
Discharges, Total	14.5	11.2	9.6	11.8	9.1
Admitted through ER	-8.5	-6.9	-9.0	-5.1	-11.5
Outlier, Day or Cost	-17.2	-18.8	-26.0	-30.5	-32.5
Mortality Rate	0.3	-1.3	-1.5	-0.1	-5.0
Rural Poverty Areas					
Any Services	-5.1	-3.8	-2.9	-2.9	-2.5
Total RVUs, All Services	-14.0	-12.8	-11.8	-12.4	-10.2
Any Primary Care Services	-4.0	-3.0	-2.3	-2.1	-2.4
Total RVUs, Primary Care Services	-6.1	-5.3	-5.4	-6.3	-4.7
Total RVUs, ER/OPD Visits	-12.2	-10.3	-15.6	-13.1	-7.8
Total RVUs, Cataract Lens Surgery	-2.3	2.4	3.7	-5.1	6.0
Discharges, Total	27.1	21.9	20.2	23.0	20.0
Admitted through ER	0.0	-0.2	-2.8	2.6	-5.7
Outlier, Day or Cost	-15.6	-5.3	-9.7	-27.4	-25.4
Mortality Rate	2.2	-0.1	2.7	2.4	-2.5

Source: PPRC analysis of 1986 Medicare data.

Note: RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Table 5. (continued)

Service	Percent Difference From Rest of Population			
	1986	1987	1988	1989
Urban HPSAs				
Any Services	-4.8	-5.4	-5.6	-5.2
Total RVUs, All Services	6.1	4.7	4.1	4.6
Any Primary Care Services	-5.3	-5.9	-6.8	-6.1
Total RVUs, Primary Care Services	6.5	4.2	3.8	4.1
Total RVUs, ER/OPD Visits	70.8	64.3	53.6	50.4
Total RVUs, Cataract Lens Surgery	-1.4	-0.7	-3.5	2.5
Discharges, Total	9.8	11.5	10.8	11.4
Admitted through ER	26.6	32.8	27.4	30.5
Outlier, Day or Cost	48.6	48.7	37.3	59.2
Mortality Rate	12.9	11.8	12.5	10.8
Urban Poverty Areas				
Any Services	-7.9	-8.1	-8.1	-8.0
Total RVUs, All Services	0.2	1.5	0.6	0.8
Any Primary Care Services	-9.1	-9.3	-9.9	-9.4
Total RVUs, Primary Care Services	-3.4	-3.5	-5.2	-5.1
Total RVUs, ER/OPD Visits	77.9	78.9	52.8	54.7
Total RVUs, Cataract Lens Surgery	-5.5	-0.4	1.7	12.3
Discharges, Total	8.0	10.0	8.8	11.6
Admitted through ER	26.6	29.6	17.0	31.7
Outlier, Day or Cost	59.2	52.1	49.2	67.4
Mortality Rate	14.8	10.1	19.7	17.4
Black Beneficiaries				
Any Services	-8.8	-8.5	-8.4	-8.1
Total RVUs, All Services	-7.9	-6.8	-7.1	-5.1
Any Primary Care Services	-9.4	-9.6	-10.1	-9.3
Total RVUs, Primary Care Services	-2.3	-3.1	-4.9	-4.1
Total RVUs, ER/OPD Visits	82.2	79.0	57.3	60.5
Total RVUs, Cataract Lens Surgery	-28.9	-19.3	-23.4	-17.0
Discharges, Total	5.5	8.3	9.0	14.5
Admitted through ER	25.8	27.1	24.1	35.0
Outlier, Day or Cost	62.9	67.3	63.1	78.5
Mortality Rate	15.8	17.1	19.9	21.2

Source: PPRC analysis of 1986 Medicare data.

Note: RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Table 5. (continued)

Service	Percent Difference from Rest of Population			
	1986	1987	1988	1989
Dual Eligible/QMB Beneficiaries				
Any Services	9.1	8.0	6.5	5.4
Total RVUs, All Services	26.8	27.1	26.2	24.3
Any Primary Care Services	13.2	12.2	10.0	8.1
Total RVUs, Primary Care Services	56.2	52.2	50.3	44.8
Total RVUs, ER/OPD Visits	105.6	109.0	106.3	104.7
Total RVUs, Cataract Lens Surgery	2.2	3.2	-2.3	-2.5
Discharges, Total	66.6	70.6	72.0	73.7
Admitted through ER	88.8	96.5	94.3	99.5
Outlier, Day or Cost	92.8	101.6	115.4	119.4
Mortality Rate	62.5	64.9	68.2	62.6
Old Old (Over Age 85)				
Any Services	14.0	13.4	13.2	12.2
Total RVUs, All Services	14.1	15.0	14.6	12.7
Any Primary Care Services	14.9	14.8	15.2	13.8
Total RVUs, Primary Care Services	28.5	28.2	29.9	29.3
Total RVUs, ER/OPD Visits	50.4	52.2	60.0	63.1
Total RVUs, Cataract Lens Surgery	40.6	46.3	42.7	40.0
Discharges, Total	57.8	58.2	61.2	60.8
Admitted through ER	100.3	104.8	108.1	105.9
Outlier, Day or Cost	71.8	87.0	91.3	83.6
Mortality Rate	281.9	288.8	291.0	286.3
Disabled Beneficiaries				
Any Services	2.5	2.0	0.9	0.5
Total RVUs, All Services	18.6	19.7	15.0	13.0
Any Primary Care Services	5.3	5.1	3.2	1.3
Total RVUs, Primary Care Services	34.8	32.9	28.5	26.1
Total RVUs, ER/OPD Visits	64.3	64.4	63.4	76.7
Total RVUs, Cataract Lens Surgery	18.6	18.4	-2.5	-5.2
Discharges, Total	45.3	43.5	42.5	41.5
Admitted through ER	60.9	69.3	63.4	66.3
Outlier, Day or Cost	87.1	53.3	58.1	46.9
Mortality Rate	31.2	32.0	30.1	30.0
1990				
Any Services				4.9
Total RVUs, All Services				23.0
Any Primary Care Services				6.9
Total RVUs, Primary Care Services				41.1
Total RVUs, ER/OPD Visits				102.2
Total RVUs, Cataract Lens Surgery				-0.2
Discharges, Total				70.3
Admitted through ER				94.0
Outlier, Day or Cost				126.3
Mortality Rate				70.0
1990				
Any Services				12.0
Total RVUs, All Services				11.6
Any Primary Care Services				14.2
Total RVUs, Primary Care Services				30.8
Total RVUs, ER/OPD Visits				63.3
Total RVUs, Cataract Lens Surgery				34.2
Discharges, Total				62.9
Admitted through ER				107.0
Outlier, Day or Cost				76.8
Mortality Rate				271.8
1990				
Any Services				-0.2
Total RVUs, All Services				12.6
Any Primary Care Services				1.4
Total RVUs, Primary Care Services				24.1
Total RVUs, ER/OPD Visits				58.4
Total RVUs, Cataract Lens Surgery				-2.0
Discharges, Total				38.5
Admitted through ER				53.4
Outlier, Day or Cost				53.7
Mortality Rate				32.1

Source: PPRC analysis of 1986 Medicare data.

Note: RVUs - stands for Relative Value Units and is a measure of total quantity of services.

Table 5. (continued)

Service	Percent Difference from Rest of Population			
	1986	1987	1988	1989
Areas with Highest Fees				
Any Services	2.9	2.8	2.4	1.9
Total RVUs, All Services	21.3	21.9	31.2	28.7
Any Primary Care Services	3.4	3.7	3.6	2.5
Total RVUs, Primary Care Services	23.5	23.9	30.6	24.4
Total RVUs, ER/OPD Visits	-14.4	-12.0	-2.2	-6.2
Total RVUs, Cataract Lens Surgery	41.4	29.7	41.0	35.8
Discharges, Total	-3.8	-4.0	-4.6	-9.6
Admitted through ER	-9.3	-9.5	-18.3	-11.9
Outlier, Day or Cost	28.5	26.0	24.1	-10.6
Mortality Rate	-7.9	-4.5	-5.7	1.4
Areas with Lowest Fees				
Any Services	-2.6	-1.6	-1.0	-0.4
Total RVUs, All Services	-16.6	-16.3	-16.8	-15.1
Any Primary Care Services	-2.4	-1.4	-1.0	-0.1
Total RVUs, Primary Care Services	-13.9	-13.7	-13.9	-12.7
Total RVUs, ER/OPD Visits	-23.4	-23.8	-25.5	-16.7
Total RVUs, Cataract Lens Surgery	-5.3	-2.5	-9.7	-9.5
Discharges, Total	3.6	2.3	3.5	4.9
Admitted through ER	-12.7	-11.8	-4.8	-11.5
Outlier, Day or Cost	-25.9	-23.5	-25.2	-22.3
Mortality Rate	1.7	-0.1	0.1	-3.1

Source: PPRC analysis of 1986 Medicare data.
 Note: RVUs - stands for Relative Value Units and is a measure of total quantity of services.

A third implication of these findings is that there may be a role for expanding community health centers, the National Health Service Corps, and other means by which the federal government steps in directly to fill gaps in the health care delivery system.²¹ Taxpayers are already at risk for the health care expenditures of Medicare beneficiaries. Higher mortality rates, excessive outlier stays, and increased use of hospital emergency rooms all add to health care costs. To the extent that timely access to care can prevent some of these poor outcomes, the federal government will recoup some of its outlays on the direct provision of care to currently underserved beneficiaries.

Finally, the presence of apparent differences in access to care suggests that additional research is needed in order to examine the causes of these access differentials and to suggest potential solutions. Only by understanding the nature of the barriers -- insufficient supply of providers, lack of information, lack of community or support services, or inability to pay -- can rational approaches be developed to increase access. HCFA recently solicited proposals in this area. Funds should be made available to finance the best of the proposed research, and this may require an increase in research funds for HCFA.²²

WORK IN PROGRESS AND PLANS FOR THE NEXT REPORT ON ACCESS

In addition to the utilization profiles shown in this report, the Commission is undertaking work in a number of related areas. This section of the report summarizes current and planned projects.

Episodes of Care

The Commission has begun work to identify certain necessary services for use as markers for good and poor access to care. The Commission's current analysis uses timely followup visits after selected hospitalizations as markers for good access to care. Preliminary results confirm many of the conclusions of earlier sections of this report regarding a lack of access to appropriate care in certain vulnerable populations.

The Commission began work in this area by studying one class of services that is generally agreed to be necessary: followup visits after hospitalization for certain medical

²¹ Chapter 6 of the Commission's *Annual Report to Congress 1992* (PPRC 1992a) discusses these mechanisms in detail.

²² The Commission's comments on the President's 1993 budget (PPRC 1992b) provide additional analysis of research funding needs.

conditions.²³ Most physicians would agree that beneficiaries hospitalized with some conditions should have a followup visit within 30 days of discharge. The conditions used for this study included DRGs for (1) acute myocardial infarction, (2) angina, (3) bronchitis/asthma, (4) cardiac arrhythmia, (5) cerebrovascular accident, (6) chemotherapy, (7) congestive heart failure, (8) GI hemorrhage, and (9) septicemia.

A 1 percent sample of beneficiaries was drawn, and all beneficiaries with discharges in these DRGs were identified using 1986 hospitalization data. Certain individuals were dropped if followup care was irrelevant or could not be tracked in the Part B data. For example, individuals who died, were discharged to a facility, and the like were excluded from the analysis. Of the remaining 11,500 discharges, 71 percent received at least one office visit, home visit, or consult in the 30 days following discharge.

When the individual vulnerable populations were examined separately for presence of followup care (Table 6), a now-familiar pattern emerged: beneficiaries in HPSAs or poverty areas, and black beneficiaries were significantly less likely to get this necessary followup care. In addition, however, the disabled and the old old also received less followup care than average. By contrast, beneficiaries living in rural areas received as much or more followup care as the average beneficiary.

Table 6. Followup Care After Selected Medical Hospitalizations, 1986

Vulnerable Population	PERCENT OF DISCHARGES RECEIVING FOLLOWUP CARE		
	Vulnerable Population	All Other	Percent Difference
Rural	71.42	70.85	0.8
HPSA (Urban, Rural)	64.58	71.87	-10.1*
Poverty (Urban, Rural)	58.39	71.83	-18.7*
Highest CPR Fees	72.58	70.77	2.6
Lowest CPR Fees	72.28	70.87	2.0
Black Beneficiaries	58.74	72.29	-18.7*
Dual Eligible/QMB	69.30	71.27	-2.8
Old Old	61.24	72.16	-15.1*
Disabled	64.19	71.58	-10.3*

Source: PPRC analysis of 1986 BMAD-IV and MEDPAR records for a 1 percent sample of beneficiaries.

Note: A "*" signifies statistically significant at $p < .05$.

²³ Because followup by surgeons is often not billed separately but instead is included in the global surgical fee, followup for surgical care could not be tracked using claims data.

Encouraged by these early results, the Commission plans to expand this analysis of episodes of care. In addition to applying the current methodology to a larger sample of beneficiaries over more years, the Commission will attempt to identify other episodes of care and to link the provision of necessary care to outcomes such as rehospitalization.

UPIN and Concentration of Services

One very direct measure of beneficiaries' access to care is whether or not a significant percentage of physicians will serve them. Some objective measure of the number and proportion of physicians serving significant numbers of Medicare beneficiaries would be a useful tool for monitoring changes in access. The Commission has begun to examine means to use claims data to monitor physician acceptance of Medicare beneficiaries.

Medicare currently monitors both the number of physicians submitting at least one bill to Medicare and the number of participating physicians in each carrier area. Both of these counts have continued to rise in recent years (PPRC 1992d). However, these aggregate counts do not capture the amount of care provided by individual physicians. At this level of detail, a physician submitting a single bill to Medicare cannot be distinguished from a physician whose entire practice consists of Medicare patients.

The physician identifiers traditionally used by Medicare Part B carriers make it difficult to perform a more sophisticated analysis of the concentration of care across physicians. Physicians use billing numbers called provider identification numbers (PINs) when submitting Medicare claims. These PINs are assigned by the individual Part B carriers, and carriers vary widely in their assignment practices (DHHS OIG 1992). PINs may have radically different formats, such as different numbers of digits, or combinations of letters and digits. PINs are not unique: one physician might have several PINs, while many physicians in a group practice might all use the same PIN. Physicians practicing in geographic areas served by two different carriers could receive PINs from both.

Medicare has made major strides toward rationalizing the identification of claims from individual physicians with its Unique Provider Identification Numbers (UPINs), part of the Medicare Physician Identification and Eligibility System (MPIES). All physicians billing Medicare must now have a UPIN taken from a master list of possible UPINs.²⁴ Physicians continue to submit bills under the old PINs, but carriers are expected to eventually cross-walk these PINs to the new UPINs when forwarding claims to HCFA.

²⁴ Some exceptions exist, including interns, residents, and physicians in HMOs.

When the UPINs are fully phased in it will be possible to measure the concentration of services across physicians in any area of the country.²⁵

The Commission is working to match UPINs to historical claims data to develop baseline patterns of care prior to the implementation of the fee schedule. However, the quality of the match between UPINs and the claims data varies considerably across Part B carriers. The Commission hopes to identify those states where the historical data may be accurately matched to the UPINs. While an analysis of the entire United States seems impossible, data from selected states may provide a reasonable picture of the concentration of care prior to and after implementation of the fee schedule.

Additional Work Planned for Next Year's Report

A number of additional analyses are planned for the Commission's 1993 report on access to care. These are briefly outlined below.

Claims from Early 1992. The Commission will soon formally request Medicare claims data for 1991 and later periods. The Commission's next report on access will include analysis of these more recent data. If possible, the next report will show utilization statistics from the first three to six months of 1992, depending on the stability of the data from that period.

Current Beneficiary Survey. Medicare's Current Beneficiary Survey will collect detailed access, health status, and environmental information for roughly 12,000 beneficiaries on an ongoing basis. The survey was first fielded in the fall of 1991, and results will become available starting mid 1992. The Commission plans a thorough analysis of these baseline CBS data for inclusion in the 1993 report on access.

Survey of Physicians. The Commission has contracted with a major polling organization to perform a detailed telephone survey of 1000 physicians to assess their reactions to the Medicare Fee Schedule. Results from that survey will be available in September 1992.

Other Sources of Information. Finally, the Commission will examine other sources of information on changes in Medicare beneficiaries' access to care. Commission staff have already contacted the American Association of Retired Persons to examine the flow of complaints received by that organization. Similarly, Commission staff will canvass congressional staff regarding constituent correspondence on beneficiaries' access to care. The Area Agencies on Aging are another potential source of information on beneficiaries'

²⁵ Currently, UPINs are mandatory only for referred services: the UPIN of the referring physician must be noted on the claim. Physicians still submit claims by physician name and PIN. HCFA staff indicate that carriers place the UPIN on roughly 70 percent of claims currently, and that essentially all claims will have UPINs by mid-1992.

complaints regarding access to care. The Commission will begin to poll beneficiary advocacy groups in areas thought to be particularly at risk to see whether they have detected increased volumes of complaints from beneficiaries. Finally, many physician organizations, including the American Medical Association and many state and specialty organizations, have been or will be polling their members regarding participation in the Medicare program. The Commission will attempt to summarize findings from these polls when they become available.

REFERENCES

- Adams, Patricia F., and Veronica Benson, "Current Estimates from the National Health Interview Survey, 1989," National Center for Health Statistics, *Vital and Health Statistics* 10(176), 1990.
- Aday, Lu Ann, and Ronald M. Anderson, "Equity of Access to Medical Care: A Conceptual and Empirical Overview," *Medical Care* 19:12 supplement (December 1981), pp 4-27.
- Billings, John, and Victor Hasselblad, *A Preliminary Study: Use of Small Area Analysis to Assess the Performance of the Outpatient Delivery System in New York City*, Health Systems Agency of New York City, New York, 1989
- Blendon, Robert J., Linda H. Aiken, Howard E. Freeman, and Christopher R. Corey, "Access to Medical Care for Black and White Americans, A Matter of Continuing Concern," *Journal of the American Medical Association* 261:2 (January 13, 1989), pp. 278-281.
- Christensen, Sandra, Stephen H. Long, and Jack Rodgers, "Acute Health Care Costs of the Aged Medicare Population: Overview and Policy Options", *Milbank Quarterly* 65:3 (1987), pp. 397-425.
- Davis, Karen, and Roger Reynolds, "Medicare and the Utilization of Health Care Services by the Elderly," *Journal of Human Resources* 10 (Summer 1975), pp. 361-377.
- Ford, Earl, Richard Cooper, Angel Castaner, Brian Simmons, Maxine Mar, "Coronary Arteriography and Coronary Bypass Survey among Whites and Other Racial Groups Relative to Hospital-Based Incidence Rates for Coronary Artery Disease: Findings from NHDS," *American Journal of Public Health* 79:4(April 1989), pp. 437-440.

- Goldberg, Kenneth C., Arthur J. Hartz, Stephen D. Jacobsen, Henry Krakauer, Alfred A Rimm, "Racial and Community Factors Influencing Coronary Artery Bypass Graft Surgery Rates for All 1986 Medicare Patients," *Journal of the American Medical Association* 267:11 (March 18, 1992), pp. 1473-1477
- Liff, Jonathan M., Chong Wong-Ho, Raymond S. Greenberg, "Rural-Urban Differences in Stage at Diagnosis," *Cancer* (March 1, 1991), pp. 1454-1459.
- Link, Charles R., Stephen H. Long, and Russell F. Settle, "Equity and the Utilization of Health Care Services by the Medicare Elderly," *Journal of Human Resources* 17:2 (1982), pp. 195-212.
- Long, Stephen H., and Russell F. Settle, "Medicare and the Disadvantaged Elderly: Objectives and Outcomes," *Health and Society* 62:4 (1984), pp. 609-656.
- Maynard, Charles, LLOYD D Fisher, Eugene R. Passamani, Thomas Pullham, "Blacks in the Coronary Artery Surgery Study (CASS): Race and Clinical Decision Making," *American Journal of Public Health* 76:12 (December 1986), pp. 1446-1446.
- Newachek, Paul W. "Access to Ambulatory Care for Poor Persons," *Health Services Research* 23:3 (August 1988), pp. 401-419.
- Oberman, Albert, and Gary Cutter "Issues in the Natural History and Treatment of Coronary Disease in Black Populations: Surgical Treatment," *American Heart Journal* 108:3 part 2 (September 1984), pp. 688-694.
- Office of Technology Assessment, U.S. Congress, *Health Care in Rural America*, OTA-H-434 (Washington, DC: U.S. Government Printing Office, September 1990).
- Physician Payment Review Commission, *Annual Report to Congress 1991* (Washington, DC: PPRC, 1991a)
- Physician Payment Review Commission, *Monitoring Access: Report to Congress*, No. 91-5 (Washington, DC: PPRC, 1991b)
- Physician Payment Review Commission, *Annual Report to Congress 1992* (Washington, DC: PPRC, 1992a)
- Physician Payment Review Commission, *Monitoring the Financial Liability of Medicare Beneficiaries*, No 92-3 (Washington, DC: PPRC, 1992d).

Physician Payment Review Commission, *Medicare Volume Performance Standard and Fee Update Recommendations for 1993*, No. 92-4 (Washington, DC: PPRC, 1992c).

Physician Payment Review Commission, *Comments on the President's 1993 Budget Proposal*, No. 92-6 (Washington, DC: PPRC, 1992b)

Stern, Robert S., Joel S. Weissman, Arnold M. Epstein, "The Emergency Department as a Pathway to Admission for Poor and High-Cost Patients," *Journal of the American Medical Association* 266:16 (October 1991), pp. 2238-2243

U.S. Department of Health and Human Services, Office of the Inspector General, *Carrier Assignment of Medicare Provider Numbers*, OEI-O6-89-00871, (Washington, DC: DHHS OIG, 1992).

Wenneker, Mark, and Arnold M. Epstein, "Racial Inequalities in the Use of Procedures for Patients With Ischemic Heart Disease in Massachusetts," *Journal of the American Medical Association* 261:2(January 3, 1989), 253-257

APPENDIX A

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APPENDIX B

DATA, METHODS, AND DETAILED TABLES

This Appendix provides notes on sources of data, definitions of utilization measures, technical notes on standardization and estimation of standard errors, and detailed tabulations of utilization for 1986.

Sources of Claims and Other Data

Four Medicare claims and administrative files form the core of this analysis. Information on hospitalizations comes from the annual Medicare Provider Analysis and Review (MEDPAR) files. These files contain discharge abstract and billing information for each Medicare hospital discharge. Part B physician bills come from the Part B Medicare Annual Data beneficiary sample files (BMAD-IV), containing information on each claims line submitted to Medicare for a sample of beneficiaries. Outpatient facility charges were derived from the outpatient bill files, which detail utilization, charges, and payments in hospital outpatient departments and selected other outpatient facilities. Finally, enrollment and death data were obtained from the Denominator file, an annual summary of monthly eligibility.

Each file was obtained for a 5 percent sample of Medicare beneficiaries. Beneficiaries enter the sample based on the terminal digits of their Social Security numbers. This provides a very even and uniform sample of all beneficiaries.

Approximately 11 percent of the original beneficiary sample was eliminated from this analysis for a variety of reasons. In roughly equal proportion, these reasons were (1) Part A enrollment only, (2) HMO enrollment only, (3) railroad retirement beneficiary, or (4) located outside the United States or state of residence unknown. Individuals with Part A or HMO enrollment only during the year would generate no Part B bills. These individuals must be dropped to avoid calculating incorrectly low Part B utilization rates. Railroad retirees were omitted due to problems matching earlier BMAD files to enrollment records for these beneficiaries. Finally, beneficiaries outside the 50 states and the District of Columbia, or beneficiaries with location information missing, were omitted because they could not be placed into geographically-defined vulnerable populations such as HPSAs or poverty areas.

Basic information on primary care HPSA location was provided by Richard C. Lee of the Office of Shortage Designation in the Health Resources and Services Administration. HPSAs may be defined by geography, or by a combination of geography and population. For example, the poverty population of an individual county might be one HPSA.

Counts of beneficiaries in HPSAs are understated in this analysis for a variety of reasons. First, only geographically defined HPSAs were used, and HPSAs that identify only selected populations in geographic areas were ignored. These geographically defined HPSAs include whole counties, as well as HPSAs defined by census tracts or minor civil divisions. Census tracts and minor civil divisions were crosswalked to ZIP codes for merger with Medicare enrollment records. In some instances, no ZIP code match could be found, or the HPSA constituted a minority of the population within the ZIP code. In these instances, HPSA status was ignored. Thus, the counts of Medicare beneficiaries in HPSAs understate the true number of beneficiaries in geographically defined HPSAs.

Information on poverty was derived from updated census information at the ZIP code level. Population below the poverty line was divided by total population to identify ZIP codes with 20 and 30 percent of population below poverty. This poverty information was then merged to beneficiary records by ZIP code.

Medicare pricing information was generally derived from the BMAD-I data file, an annual summary of 100 percent of Part B physician bills. Average Medicare allowed charge was used as the price for each service. Price indices were usually constructed by comparing the cost of the services produced within a locality at local and national prices. Areas expected to see large gains and losses under the fee schedule were identified through the Commission's simulations of Medicare payment rates.

Quantity of Services

Utilization rates other than mortality rates are expressed per beneficiary year of Part A (for hospital data) or Part B (for all other data) enrollment. Beneficiaries need not be enrolled an entire year: they may become eligible for Medicare in mid-year, may die, may join an HMO, or may simply choose to disenroll from Medicare during the year. Because claims cannot be generated while the beneficiary is not enrolled, the appropriate denominator for claims analysis is the beneficiary-year of enrollment rather than the beneficiary. In this analysis, the typical beneficiary was enrolled for approximately eleven and a quarter months out of the year.

Total quantity or volume of care was calculated from counts of services multiplied by relative value units (RVUs) for each service. Services were defined by five-digit HCFA Common Procedure Coding System (HCPCS) code and two-character modifier. (HCPCS codes include the American Medical Association's Current Procedural Terminology codes, plus additional codes for selected Medicare-covered services and devices.) Only those modifiers that affect service pricing were retained. Other modifiers that are medically meaningful but irrelevant for payment purposes (such as LT and RT for left and right side) were ignored.

The RVUs are based on the Medicare national average allowed charge per service over the period 1986 through 1990, calculated by pooling total allowed charges and services in the Medicare BMAD-I (procedure summary) file. Thus, total utilization is effectively scaled in real 1988 dollars, the midpoint of the study period, and is based on a summary of nearly 100 percent of all Part B claims from the period. It might have been preferable, from a theoretical standpoint, to have used resource-based RVUs from the Medicare Fee Schedule rather than RVUs based on average allowed charges. That, however, would have been a difficult undertaking because the Medicare Fee Schedule conforms to 1992 HCPCS coding, and codes have changed substantially since 1986.

Outpatient Department Services

Outpatient department services were measured from two sources of data. First, Part B physician claims were totalled for visits coded with either 1) hospital OPD as the site of service or 2) emergency services. Of these, emergency visits constitute the vast majority of outpatient visit volume. Second, Part B facility charge bills processed through the Part A fiscal intermediaries were also tabulated. These bills identify the type of service through a series of revenue center codes. Counts of services and charges for revenue center codes corresponding to outpatient clinic or emergency room were cumulated.

Medicare payment regulations will create discrepancies between these two sources of outpatient data. In some cases, an outpatient visit may generate a BMAD physician bill but no corresponding outpatient facility bill. This might occur if a patient is seen first in the emergency room, then subsequently admitted to the hospital by a physician other than the emergency physician. Conversely, an outpatient visit might generate an outpatient facility bill but no BMAD physician bill if the individual was seen by an intern or resident.

This latter case seems to dominate many of the results, perhaps because outpatient care is being provided in large part in hospitals that rely on intern and resident labor. In many cases, the outpatient facility bills show a wider differential in hospital OPD use than do the physician bills. In general, however, these two sources of data tend to move together. That is, populations with high OPD use according to physician claims also show high OPD use according to OPD facility charge bills.

A somewhat smaller discrepancy may also arise due to changes in Part B carriers' coding of hospital OPD as the site of service for outpatient visits. Analysis of BMAD I (procedure file) data showed several carriers who began to report significant numbers of non-emergency visits in hospital OPDs only in 1990.

An important related point is that, throughout the analysis, the indicators for any use of care and total use of care are based on Part B physicians' bills only, not on outpatient facility charge bills. Service use is understated to the extent that beneficiaries may receive outpatient services without generating a corresponding Part B physician bill. This may

have a modest effect on measured utilization. For example, roughly 0.5 percent of white beneficiaries had a facility charge for a hospital OPD visit service but no Part B physician bill during the year, while corresponding figure for black beneficiaries was roughly 1.5 percent. The effect of this is to exaggerate slightly some of the differences shown across vulnerable populations.

An additional aspect of the outpatient facility bills is that the hospital is identified by six-digit HCFA provider number. Other HCFA Part A files can then be used to identify different classes of hospitals in an attempt to identify "providers of last resort," hospital clinics whose mission includes service to the uninsured and underinsured. In this analysis, urban public hospitals and urban public hospitals with high inpatient Medicaid case loads were identified. Although no use was made of this information for this year's report, analysis in subsequent years will flag any increasing use of these providers of care.

Finally, complete data on 1990 outpatient bills were not available for this analysis. For that reason, statistics based on outpatient facility charge bills are all missing in 1990.

Direct Standardization

Direct age-sex standardization was used for all results. For most populations, the impact of this is to replace actual use rates with the use rates that are projected to occur if the vulnerable population had the same age-sex mix as the overall beneficiary population.

To generate the standardized rates for a given vulnerable population, that population and the entire beneficiary population were first divided into age-sex cells: men and women, ages under 45, 45 to 65, 65 to 75, 75 to 85, and over 85 years of age. For the vulnerable population, utilization per beneficiary year was calculated within each age-sex cell. For the entire population, total number of beneficiaries was calculated within each age-sex cell. The standardized use rate was then calculated as a weighted average of the utilization rates in the age-sex cells, using the percentage of the total beneficiary population in those cells as the weights.

Quirks arise when standardizing rates for two populations: males and the old old. In this case, these populations entirely fill some age-sex cells, but are completely missing from others. This means that no averaging of rates takes place during direct standardization, because the whole-population weights for the cells with non-missing data are just the weights for the vulnerable population itself. For these populations, standardized and unstandardized rates are identical.

A different problem may arise in standardizing rates for the disabled. In this case, the disabled nearly (but not entirely) fill some age-sex cells. This probably reduces somewhat the effects of age-sex standardization on this population.

Standard Errors

Standard errors for the percentage difference between populations reported in the tables were obtained by the grouped jackknife technique. For a complex statistic such as the ratio of age-sex adjusted relative value units per beneficiary-year in one population relative to another, it is often difficult or impossible to construct the exact sample distribution. In such cases, it is often simpler and more robust simply to jackknife the complex statistic rather than attempt to obtain the exact analytic distribution.

Jackknifing is a type of resampling plan (Efron 1982), in which the data are subdivided or resampled, and the statistic of interest is calculated numerous times on the separate subsamples. Variation in these estimates provides information on the stability of the estimate calculated on the entire data set.

This analysis uses the simple grouped jackknife suggested by Brillinger (1964). In this case, beneficiaries were partitioned into ten subsamples, and each statistic was calculated ten times. The standard deviation of these ten estimates shows how much the statistics fluctuate in a sample that is one-tenth the size of the entire database. To determine a standard deviation for statistics calculated on the entire database, this original standard deviation is divided by the square root of 10, since the standard deviation is inversely proportional to the square root of the sample size.

High-Technology Services

The list of high-technology services was drawn from existing Commission work on the growth of volume of services and the Volume Performance Standard. These services reflect new and growing technologies that were identified by various medical societies, and that may be identified by individual CPT codes. The highest-volume services contained under this definition include CAT scans, endoscopies, and MRI scans. A complete list of these services is given in the Commission's 1992 VPS report (PPRC 1992c).

Preventive Care

Only four preventive care services covered by Medicare could be identified. These include mammograms, Pap smears, pneumococcal vaccines, and influenza vaccines. Of these, the vaccines contribute a relatively small amount of volume. Thus, preventive care in this analysis is largely preventive care for women.

In the case of mammograms and Pap smears, no distinction was made between screening procedures and diagnostic procedures. Discussion with several physicians suggested that the distinction between screening and diagnostic use of these procedures was somewhat hazy prior to explicit Medicare coverage of the screening procedures. Nevertheless, statistics shown here may reflect both the diagnostic use of these tests and true preventive care in the form of screening examinations.

Anesthesia

All anesthesia services and all services of anesthesiologists and nurse anesthetists were omitted from this analysis. This was done for several reasons. First, prior to 1989, some (but not all) carriers recorded anesthesia charges under the related surgical HCPCS codes. This greatly complicates any analysis of charges and volumes, since the volumes and charges for anesthesia must be kept separate from those for the surgery itself. Second, there is no simple way to calculate a total quantity of anesthesia care provided, since carriers report a variety of units of service for anesthesia. Thus, for simplicity and due to difficulties in counting volume of service, records for anesthesia services were omitted.

Hospital Outlier Status

Hospital outlier status was determined from the outlier field on the Part A MEDPAR discharge summary record. Total payments for outliers must by law comprise between 5 and 6 percent of Part A outlays. However, significant changes in the way in which outliers were identified and paid for occurred over this period, resulting in fewer outliers as a percentage of all discharges, but a higher reimbursement per outlier case. In addition, there was a shift from identifying outliers based on long lengths of stay to identifying them based on high total costs (ProPAC 1989). For this reason, outliers based on either stay or costs were used for this analysis.

REFERENCES

- Brillinger, D. "The Asymptotic Behaviour of Tukey's General Method of Setting Approximate Confidence Limits (the Jackknife) When Applied to Maximum Likelihood Estimates," *Review of the International Statistical Institute* 23 (1964), pp. 202-206.
- Efron, B., *The Jackknife, the Bootstrap and Other Resampling Plans*, Society for Industrial and Applied Mathematics, Philadelphia, 1982.
- Physician Payment Review Commission, *Medicare Volume Performance Standard and Fee Update Recommendations for 1993*, No. 92-4 (Washington, DC: PPRC, 1992c).
- Prospective Payment Assessment Commission, *Report and Recommendations to the Secretary, U.S. Department of Health and Human Services*, (Washington, DC: ProPAC, March 1, 1989).

Table B-1: Utilization Rates Per Beneficiary, 1986
Beneficiaries Outside Metropolitan Areas
Utilization by Broad Categories of Service

	RURAL	MSA	DIFFERENCE	(S.E.)
Number of Beneficiaries	422,000	1,070,000		
Any Services	0.821	0.843	-2.6%	(0.1%)
Total RVUs, All Services	659.000	810.000	-18.7%	(0.3%)
Number of Services, Total	16.600	20.600	-19.3%	(0.3%)
Any Non-Inpatient Services	0.814	0.836	-2.7%	(0.1%)
Total RVUs, Non-Inpatient Services	358.000	458.000	-22.0%	(0.2%)
Number of Non-Inpatient Services	11.700	14.900	-21.0%	(0.2%)
Any Primary Care Services	0.748	0.763	-2.0%	(0.1%)
Total RVUs, Primary Care Services	107.000	127.000	-15.6%	(0.1%)
Number of Primary Care Services	4.300	4.760	-9.5%	(0.2%)
Any Preventive Care Services	0.064	0.078	-18.1%	(0.7%)
Total RVUs, Preventive Care Services	2.160	3.110	-30.5%	(2.7%)
Number of Preventive Care Services	0.099	0.116	-14.8%	(7.0%)
Any Hi-Tech Services	0.222	0.264	-16.0%	(0.3%)
Total RVUs, Hi-Tech Services	90.000	110.000	-18.1%	(0.4%)
Number of Hi-Tech Services	0.450	0.599	-25.0%	(0.3%)
Any OBRA89 Overvalued Procedures	0.339	0.419	-19.0%	(0.2%)
Total RVUs, OBRA89 Overvalued Procedures	143.000	163.000	-12.5%	(0.6%)
Number of OBRA89 Overvalued Procedures	0.897	1.200	-25.3%	(0.3%)
Any Services with General/Family Practitioner	0.448	0.336	33.2%	(0.3%)
Any Services with Internist	0.327	0.422	-22.4%	(0.2%)
Any Services with Surgeon	0.442	0.539	-18.0%	(0.2%)
Any Services with Medical Specialist	0.459	0.494	-7.1%	(0.2%)
Any Services with Group/Miscellaneous	0.366	0.472	-22.5%	(0.1%)
Total RVUs with General/Family Practitioner	99.700	71.100	40.3%	(0.7%)
Total RVUs with Internist	102.000	146.000	-30.6%	(0.4%)
Total RVUs with Surgeon	252.000	303.000	-16.9%	(0.5%)
Total RVUs with Medical Specialist	137.000	205.000	-33.2%	(0.4%)
Total RVUs with Group/Miscellaneous	72.300	90.300	-19.9%	(1.0%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-1 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Outside Metropolitan Areas
Utilization of Visits and Consultations

	RURAL	MSA	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.748	0.763	-2.0%	(0.1%)
Total RVUs, Primary Care Visits	108.000	128.000	-15.9%	(0.1%)
Number of Primary Care Visits	4.300	4.760	-9.5%	(0.2%)
Any Office Visits	0.688	0.691	-0.5%	(0.2%)
Total RVUs, Office Visits	88.500	104.000	-14.6%	(0.2%)
Number of Office Visits	3.610	3.950	-8.6%	(0.2%)
Any ER/OPD Visits	0.164	0.182	-10.1%	(0.3%)
Total RVUs, ER/OPD Visits	8.960	11.700	-23.5%	(0.5%)
Number of ER/OPD Visits	0.288	0.349	-17.3%	(0.6%)
Any Consultations	0.139	0.194	-28.6%	(0.3%)
Total RVUs, Consultations	20.700	35.700	-42.0%	(0.8%)
Number of Consultations	0.303	0.498	-39.1%	(0.7%)
Any Primary Care Visits, General/Family Practitioner	0.421	0.315	33.7%	(0.4%)
Any Primary Care Visits, Internist	0.252	0.354	-28.8%	(0.2%)
Any Primary Care Visits, Specialist	0.410	0.482	-15.0%	(0.2%)
Total RVUs, Primary Care Visits, General/Family Practitioner	46.200	35.400	30.5%	(0.6%)
Total RVUs, Primary Care Visits, Internist	25.200	40.800	-38.2%	(0.3%)
Total RVUs, Primary Care Visits, Specialist	36.100	51.700	-30.0%	(0.2%)
Number of Primary Care Visits, General/Family Practitioner	1.910	1.350	40.9%	(0.6%)
Number of Primary Care Visits, Internist	0.994	1.530	-35.0%	(0.3%)
Number of Primary Care Visits, Specialist	1.400	1.870	-25.1%	(0.2%)
Any Consultations with General/Family Practitioner	0.007	0.008	-11.0%	(1.8%)
Any Consultations with Internist	0.044	0.062	-28.2%	(0.4%)
Any Consultations with Specialist	0.112	0.165	-32.3%	(0.3%)
Total RVUs, Consultations with General/Family Practitioner	0.654	0.798	-18.0%	(2.4%)
Total RVUs, Consultations with Internist	5.530	8.990	-38.4%	(0.6%)
Total RVUs, Consultations with Specialist	14.500	25.900	-43.9%	(0.9%)
Number of Consultations with General/Family Practitioner	0.010	0.012	-9.7%	(3.6%)
Number of Consultations with Internist	0.077	0.125	-38.5%	(1.0%)
Number of Consultations with Specialist	0.216	0.362	-40.3%	(0.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-1 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Outside Metropolitan Areas
Utilization of Cardiac Procedures and Selected Surgeries

	RURAL	MSA	DIFFERENCE	(S.E.)
Any EKGs	0.306	0.388	-21.1%	(0.2%)
Any Cardiac Ultrasounds	0.031	0.047	-33.7%	(0.7%)
Any Cardiac Catheterizations	0.013	0.015	-16.2%	(1.7%)
Any PCTAs	0.001	0.001	-7.3%	(3.1%)
Any CABGs	0.003	0.003	-5.6%	(3.8%) NS
Total RVUs, EKGs	19.500	28.400	-31.4%	(0.4%)
Total RVUs, Cardiac Ultrasounds	5.030	7.920	-36.5%	(0.9%)
Total RVUs, Cardiac Catheterizations	9.320	10.700	-12.7%	(1.9%)
Total RVUs, PCTAs	1.670	1.750	-4.8%	(3.6%) NS
Total RVUs, CABGs	11.600	12.300	-5.8%	(4.0%) NS
Number of EKGs	0.750	1.030	-27.3%	(0.4%)
Number of Cardiac Ultrasounds	0.047	0.073	-35.7%	(0.7%)
Number of Cardiac Catheterizations	0.017	0.022	-19.3%	(2.0%)
Number of PCTAs	0.001	0.001	-6.0%	(3.8%) NS
Number of CABGs	0.003	0.003	-6.2%	(4.1%) NS
Any Cataract Lens Surgeries	0.025	0.027	-7.2%	(1.0%)
Any Joint Prostheses	0.005	0.005	7.9%	(2.5%)
Any Cholecystectomies	0.005	0.005	17.4%	(2.1%)
Any Hysterectomies	0.002	0.002	19.8%	(4.6%)
Any TURPs	0.008	0.008	-1.0%	(1.8%) NS
Total RVUs, Cataract Lens Surgeries	44.400	47.600	-6.7%	(1.1%)
Total RVUs, Joint Prostheses	13.200	12.200	8.0%	(2.9%)
Total RVUs, Cholecystectomies	5.140	4.300	19.6%	(2.0%)
Total RVUs, Hysterectomies	2.090	1.780	17.8%	(4.8%)
Total RVUs, TURPs	9.080	9.250	-1.8%	(1.8%) NS
Number of Cataract Lens Surgeries	0.029	0.031	-6.9%	(1.1%)
Number of Joint Prostheses	0.006	0.006	7.4%	(3.3%)
Number of Cholecystectomies	0.006	0.005	18.4%	(2.2%)
Number of Hysterectomies	0.002	0.002	18.0%	(4.6%)
Number of TURPs	0.008	0.008	-1.3%	(2.0%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-1 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Outside Metropolitan Areas
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	RURAL	MSA	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.048	0.061	-21.0%	(0.5%)
Any Upper GI Endoscopies	0.019	0.022	-13.4%	(1.1%)
Any Other Endoscopies	0.032	0.037	-13.6%	(0.4%)
Any Arthroscopies	0.001	0.001	-15.4%	(3.4%)
Total RVUs, Lower GI Endoscopies	11.900	15.600	-23.6%	(0.5%)
Total RVUs, Upper GI Endoscopies	7.570	9.020	-16.1%	(1.5%)
Total RVUs, Other Endoscopies	9.570	11.500	-16.6%	(0.9%)
Total RVUs, Arthroscopies	1.020	1.220	-16.6%	(3.1%)
Any Radiology Services	0.475	0.512	-7.2%	(0.2%)
Any CAT Scans	0.073	0.089	-17.7%	(0.5%)
Any MRIs	0.002	0.004	-52.6%	(1.7%)
Any Nuclear Imaging Services	0.051	0.064	-21.1%	(0.8%)
Any Non-Cardiac Ultrasounds	0.071	0.082	-13.3%	(0.6%)
Total RVUs, Radiology Services	75.700	95.400	-20.6%	(0.3%)
Total RVUs, Cat Scans	11.900	15.400	-22.7%	(0.4%)
Total RVUs, MRIs	0.663	1.510	-56.0%	(2.0%)
Total RVUs, Nuclear Imaging Services	4.970	7.370	-32.6%	(1.0%)
Total RVUs, Non-Cardiac Ultrasounds	6.890	9.140	-24.7%	(0.8%)
Any Mammograms	0.036	0.047	-24.2%	(0.9%)
Any Pap Smears	0.021	0.029	-27.4%	(1.3%)
Any Pneumonia Vaccines	0.012	0.010	22.4%	(2.4%)
Any Influenza Vaccines	0.000	0.000	-0.7%	(6.7%) NS
Total RVUs, Mammograms	1.610	2.520	-36.2%	(0.9%)
Total RVUs, Pap Smears	0.186	0.262	-29.2%	(1.3%)
Total RVUs, Pneumonia Vaccines	0.366	0.327	12.1%	(27.4%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-0.5%	(8.2%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-1 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Outside Metropolitan Areas
Hospital Outpatient and Inpatient Services and Mortality Rate**

	RURAL	MSA	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.171	0.174	-1.4%	(0.2%)
Number of Visits/ER Services	0.382	0.491	-22.2%	(0.4%)
Charges, Visits/ER Services	14.100	24.200	-41.6%	(0.3%)
Charges, All Services	262.000	330.000	-20.6%	(0.9%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.010	0.033	-71.2%	(0.4%)
Number of Visits/ER Services	0.029	0.130	-77.8%	(0.5%)
Charges, Visits/ER Services	0.974	6.560	-85.1%	(0.5%)
Charges, All Services	12.000	34.300	-64.9%	(0.9%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.005	0.017	-71.6%	(0.6%)
Number of Visits/ER Services	0.016	0.077	-79.6%	(0.5%)
Charges, Visits/ER Services	0.465	3.280	-85.8%	(0.5%)
Charges, All Services	6.910	16.500	-58.1%	(1.7%)
Inpatient Services, Any Hospital				
Discharges, Total	0.362	0.331	9.2%	(0.5%)
Discharges, ACS DRGs	0.081	0.066	22.8%	(1.0%)
Discharges, Low Variation DRGs	0.019	0.016	19.1%	(1.5%)
Admitted Through ER	0.119	0.138	-13.5%	(0.7%)
Outlier, Day or Cost	0.009	0.013	-26.4%	(1.5%)
Discharged Dead	0.021	0.022	-2.9%	(1.6%) NS
All Deaths				
Mortality Rate	0.048	0.048	-0.7%	(1.0%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-2: Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the South
Utilization by Broad Categories of Service

	SOUTH	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	515,000	977,000		
Any Services	0.821	0.845	-2.8%	(0.1%)
Total RVUs, All Services	754.000	773.000	-2.4%	(0.3%)
Number of Services, Total	18.500	19.900	-7.2%	(0.3%)
Any Non-Inpatient Services	0.814	0.838	-2.9%	(0.1%)
Total RVUs, Non-Inpatient Services	418.000	436.000	-4.1%	(0.3%)
Number of Non-Inpatient Services	13.100	14.400	-9.1%	(0.2%)
Any Primary Care Services	0.742	0.768	-3.5%	(0.1%)
Total RVUs, Primary Care Services	112.000	126.000	-11.0%	(0.2%)
Number of Primary Care Services	4.270	4.810	-11.2%	(0.2%)
Any Preventive Care Services	0.069	0.076	-9.2%	(0.4%)
Total RVUs, Preventive Care Services	2.480	3.050	-18.9%	(1.1%)
Number of Preventive Care Services	0.086	0.124	-30.7%	(2.5%)
Any Hi-Tech Services	0.249	0.253	-1.6%	(0.3%)
Total RVUs, Hi-Tech Services	104.000	105.000	-1.1%	(0.5%)
Number of Hi-Tech Services	0.544	0.563	-3.4%	(0.4%)
Any OBRA89 Overvalued Procedures	0.388	0.401	-3.1%	(0.2%)
Total RVUs, OBRA89 Overvalued Procedures	162.000	155.000	4.8%	(0.8%)
Number of OBRA89 Overvalued Procedures	1.060	1.140	-7.0%	(0.3%)
Any Services with General/Family Practitioner	0.415	0.343	20.9%	(0.4%)
Any Services with Internist	0.401	0.391	2.4%	(0.2%)
Any Services with Surgeon	0.501	0.517	-3.0%	(0.1%)
Any Services with Medical Specialist	0.479	0.487	-1.8%	(0.2%)
Any Services with Group/Miscellaneous	0.370	0.480	-23.0%	(0.2%)
Total RVUs with General/Family Practitioner	89.300	74.000	20.7%	(0.8%)
Total RVUs with Internist	134.000	133.000	0.5%	(0.6%) NS
Total RVUs with Surgeon	301.000	282.000	6.6%	(0.5%)
Total RVUs with Medical Specialist	187.000	184.000	1.7%	(0.4%)
Total RVUs with Group/Miscellaneous	47.100	105.000	-55.3%	(0.3%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-2 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the South
Utilization of Visits and Consultations

	SOUTH	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.742	0.768	-3.5%	(0.1%)
Total RVUs, Primary Care Visits	113.000	127.000	-11.3%	(0.2%)
Number of Primary Care Visits	4.270	4.810	-11.2%	(0.2%)
Any Office Visits	0.678	0.697	-2.7%	(0.1%)
Total RVUs, Office Visits	93.400	103.000	-9.0%	(0.2%)
Number of Office Visits	3.610	3.980	-9.5%	(0.2%)
Any ER/OPD Visits	0.172	0.179	-3.9%	(0.5%)
Total RVUs, ER/OPD Visits	10.400	11.200	-7.9%	(0.8%)
Number of ER/OPD Visits	0.314	0.341	-7.8%	(0.8%)
Any Consultations	0.168	0.184	-9.0%	(0.3%)
Total RVUs, Consultations	29.500	32.400	-9.1%	(0.6%)
Number of Consultations	0.437	0.445	-1.9%	(0.7%)
Any Primary Care Visits, General/Family Practitioner	0.389	0.321	21.1%	(0.4%)
Any Primary Care Visits, Internist	0.318	0.328	-2.9%	(0.2%)
Any Primary Care Visits, Specialist	0.413	0.487	-15.2%	(0.1%)
Total RVUs, Primary Care Visits, General/Family Practitioner	41.700	36.800	13.2%	(0.5%)
Total RVUs, Primary Care Visits, Internist	33.200	37.900	-12.5%	(0.3%)
Total RVUs, Primary Care Visits, Specialist	37.800	52.200	-27.6%	(0.2%)
Number of Primary Care Visits, General/Family Practitioner	1.640	1.440	13.8%	(0.5%)
Number of Primary Care Visits, Internist	1.250	1.440	-13.4%	(0.3%)
Number of Primary Care Visits, Specialist	1.380	1.930	-28.3%	(0.2%)
Any Consultations with General/Family Practitioner	0.009	0.006	52.9%	(4.3%)
Any Consultations with Internist	0.058	0.056	4.0%	(0.4%)
Any Consultations with Specialist	0.137	0.156	-12.5%	(0.3%)
Total RVUs, Consultations with General/Family Practitioner	1.000	0.627	60.0%	(4.9%)
Total RVUs, Consultations with Internist	8.020	7.990	0.4%	(1.0%) NS
Total RVUs, Consultations with Specialist	20.500	23.800	-14.1%	(0.7%)
Number of Consultations with General/Family Practitioner	0.015	0.009	60.7%	(6.2%)
Number of Consultations with Internist	0.112	0.110	1.1%	(1.3%) NS
Number of Consultations with Specialist	0.310	0.325	-4.7%	(0.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-2 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the South
Utilization of Cardiac Procedures and Selected Surgeries

	SOUTH	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.353	0.371	-4.8%	(0.2%)
Any Cardiac Ultrasounds	0.040	0.044	-8.0%	(0.4%)
Any Cardiac Catheterizations	0.014	0.014	1.9%	(1.3%) NS
Any PCTAs	0.001	0.001	-13.0%	(6.2%)
Any CABGs	0.003	0.003	12.5%	(3.5%)
Total RVUs, EKGs	24.200	26.700	-9.6%	(0.2%)
Total RVUs, Cardiac Ultrasounds	6.350	7.490	-15.2%	(0.7%)
Total RVUs, Cardiac Catheterizations	10.500	10.200	3.6%	(1.4%)
Total RVUs, PCTAs	1.560	1.820	-14.3%	(7.0%)
Total RVUs, CABGs	13.000	11.600	11.7%	(3.6%)
Number of EKGs	0.890	0.983	-9.4%	(0.3%)
Number of Cardiac Ultrasounds	0.057	0.070	-19.7%	(0.5%)
Number of Cardiac Catheterizations	0.019	0.021	-9.5%	(1.3%)
Number of PCTAs	0.001	0.001	-14.7%	(7.5%) NS
Number of CABGs	0.003	0.003	10.5%	(3.5%)
Any Cataract Lens Surgeries	0.029	0.025	16.1%	(1.5%)
Any Joint Prostheses	0.005	0.005	-15.6%	(2.3%)
Any Cholecystectomies	0.005	0.005	14.3%	(2.5%)
Any Hysterectomies	0.002	0.002	4.8%	(4.0%) NS
Any TURPs	0.008	0.008	6.5%	(2.1%)
Total RVUs, Cataract Lens Surgeries	52.500	43.600	20.3%	(1.3%)
Total RVUs, Joint Prostheses	11.200	13.200	-15.2%	(2.7%)
Total RVUs, Cholecystectomies	4.910	4.330	13.3%	(2.7%)
Total RVUs, Hysterectomies	1.890	1.850	2.4%	(3.5%) NS
Total RVUs, TURPs	9.570	9.010	6.2%	(2.0%)
Number of Cataract Lens Surgeries	0.034	0.028	19.6%	(1.3%)
Number of Joint Prostheses	0.005	0.006	-14.5%	(2.9%)
Number of Cholecystectomies	0.005	0.005	13.8%	(2.6%)
Number of Hysterectomies	0.002	0.002	3.5%	(3.8%) NS
Number of TURPs	0.009	0.008	7.0%	(2.0%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-2 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the South
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	SOUTH	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.057	0.058	-0.6%	(0.6%) NS
Any Upper GI Endoscopies	0.023	0.021	9.3%	(1.1%)
Any Other Endoscopies	0.037	0.035	4.6%	(1.0%)
Any Arthroscopies	0.001	0.001	-10.3%	(3.8%)
Total RVUs, Lower GI Endoscopies	14.600	14.500	1.2%	(1.2%) NS
Total RVUs, Upper GI Endoscopies	9.050	8.370	8.1%	(1.3%)
Total RVUs, Other Endoscopies	11.200	10.800	4.1%	(1.2%)
Total RVUs, Arthroscopies	1.160	1.160	0.1%	(5.2%) NS
Any Radiology Services	0.504	0.500	0.9%	(0.2%)
Any CAT Scans	0.086	0.083	3.4%	(0.6%)
Any MRIs	0.003	0.003	-12.9%	(2.0%)
Any Nuclear Imaging Services	0.060	0.061	-1.7%	(0.7%)
Any Non-Cardiac Ultrasounds	0.080	0.079	2.1%	(0.6%)
Total RVUs, Radiology Services	92.100	88.500	4.0%	(0.4%)
Total RVUs, Cat Scans	15.100	14.100	7.1%	(0.9%)
Total RVUs, MRIs	1.080	1.370	-21.1%	(2.6%)
Total RVUs, Nuclear Imaging Services	6.420	6.820	-5.8%	(0.9%)
Total RVUs, Non-Cardiac Ultrasounds	8.340	8.580	-2.8%	(0.9%)
Any Mammograms	0.039	0.047	-17.4%	(0.6%)
Any Pap Smears	0.027	0.027	-0.9%	(1.0%) NS
Any Pneumonia Vaccines	0.011	0.011	8.3%	(2.3%)
Any Influenza Vaccines	0.000	0.000	-23.7%	(7.9%)
Total RVUs, Mammograms	2.090	2.370	-11.8%	(0.5%)
Total RVUs, Pap Smears	0.240	0.242	-0.6%	(1.5%) NS
Total RVUs, Pneumonia Vaccines	0.145	0.441	-67.2%	(4.5%)
Total RVUs, Influenza Vaccines	0.002	0.003	-16.7%	(9.7%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-2 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the South
Hospital Outpatient and Inpatient Services and Mortality Rate

	SOUTH	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.166	0.177	-6.2%	(0.4%)
Number of Visits/ER Services	0.403	0.490	-17.8%	(0.7%)
Charges, Visits/ER Services	14.900	24.700	-39.6%	(0.5%)
Charges, All Services	280.000	327.000	-14.2%	(0.6%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.033	0.023	45.2%	(2.0%)
Number of Visits/ER Services	0.117	0.093	25.4%	(3.0%)
Charges, Visits/ER Services	3.940	5.520	-28.6%	(1.4%)
Charges, All Services	32.800	25.400	29.4%	(4.1%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.019	0.011	82.9%	(3.7%)
Number of Visits/ER Services	0.081	0.048	66.6%	(6.2%)
Charges, Visits/ER Services	2.670	2.370	12.5%	(4.0%)
Charges, All Services	17.000	12.000	41.7%	(6.6%)
Inpatient Services, Any Hospital				
Discharges, Total	0.363	0.328	10.8%	(0.5%)
Discharges, ACS DRGs	0.077	0.067	14.8%	(1.0%)
Discharges, Low Variation DRGs	0.017	0.016	6.8%	(1.9%)
Admitted Through ER	0.133	0.132	0.6%	(0.8%) NS
Outlier, Day or Cost	0.012	0.011	8.8%	(1.7%)
Discharged Dead	0.023	0.021	6.4%	(1.4%)
All Deaths				
Mortality Rate	0.048	0.048	0.9%	(0.6%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-3: Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the Rural South
Utilization by Broad Categories of Service

	RURAL SOUTH	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	188,000	1,304,000		
Any Services	0.810	0.840	-3.6%	(0.1%)
Total RVUs, All Services	677.000	780.000	-13.2%	(0.5%)
Number of Services, Total	16.900	19.800	-14.6%	(0.5%)
Any Non-Inpatient Services	0.802	0.834	-3.8%	(0.1%)
Total RVUs, Non-Inpatient Services	360.000	440.000	-18.2%	(0.3%)
Number of Non-Inpatient Services	11.700	14.300	-18.5%	(0.3%)
Any Primary Care Services	0.739	0.762	-3.0%	(0.1%)
Total RVUs, Primary Care Services	109.000	123.000	-11.5%	(0.2%)
Number of Primary Care Services	4.350	4.670	-6.8%	(0.2%)
Any Preventive Care Services	0.058	0.076	-23.9%	(0.9%)
Total RVUs, Preventive Care Services	1.710	3.010	-43.3%	(1.0%)
Number of Preventive Care Services	0.068	0.117	-41.7%	(2.1%)
Any Hi-Tech Services	0.223	0.256	-13.0%	(0.3%)
Total RVUs, Hi-Tech Services	90.900	106.000	-14.4%	(0.7%)
Number of Hi-Tech Services	0.460	0.571	-19.3%	(0.8%)
Any OBRA89 Overvalued Procedures	0.350	0.403	-13.1%	(0.2%)
Total RVUs, OBRA89 Overvalued Procedures	147.000	159.000	-7.4%	(0.5%)
Number of OBRA89 Overvalued Procedures	0.951	1.140	-16.4%	(0.5%)
Any Services with General/Family Practitioner	0.485	0.351	38.1%	(0.5%)
Any Services with Internist	0.343	0.402	-14.7%	(0.2%)
Any Services with Surgeon	0.446	0.521	-14.4%	(0.2%)
Any Services with Medical Specialist	0.457	0.488	-6.4%	(0.3%)
Any Services with Group/Miscellaneous	0.317	0.460	-31.2%	(0.3%)
Total RVUs with General/Family Practitioner	114.000	74.200	54.3%	(1.1%)
Total RVUs with Internist	110.000	137.000	-19.5%	(0.7%)
Total RVUs with Surgeon	268.000	291.000	-8.2%	(0.4%)
Total RVUs with Medical Specialist	146.000	191.000	-23.5%	(0.7%)
Total RVUs with Group/Miscellaneous	39.900	91.800	-56.6%	(0.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-3 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the Rural South
Utilization of Visits and Consultations

	RURAL SOUTH	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.739	0.762	-3.0%	(0.1%)
Total RVUs, Primary Care Visits	109.000	124.000	-11.7%	(0.2%)
Number of Primary Care Visits	4.350	4.670	-6.8%	(0.2%)
Any Office Visits	0.678	0.692	-2.0%	(0.2%)
Total RVUs, Office Visits	90.500	101.000	-10.1%	(0.2%)
Number of Office Visits	3.660	3.880	-5.7%	(0.3%)
Any ER/OPD Visits	0.171	0.178	-3.7%	(0.6%)
Total RVUs, ER/OPD Visits	9.570	11.100	-14.0%	(0.7%)
Number of ER/OPD Visits	0.307	0.335	-8.5%	(0.7%)
Any Consultations	0.136	0.185	-26.3%	(0.6%)
Total RVUs, Consultations	21.000	32.900	-36.2%	(0.7%)
Number of Consultations	0.317	0.460	-31.1%	(0.9%)
Any Primary Care Visits, General/Family Practitioner	0.459	0.328	39.7%	(0.4%)
Any Primary Care Visits, Internist	0.256	0.334	-23.3%	(0.3%)
Any Primary Care Visits, Specialist	0.371	0.474	-21.8%	(0.1%)
Total RVUs, Primary Care Visits, General/Family Practitioner	52.000	36.500	42.4%	(0.8%)
Total RVUs, Primary Care Visits, Internist	25.900	37.800	-31.5%	(0.4%)
Total RVUs, Primary Care Visits, Specialist	31.500	49.500	-36.5%	(0.3%)
Number of Primary Care Visits, General/Family Practitioner	2.150	1.420	51.5%	(0.8%)
Number of Primary Care Visits, Internist	1.010	1.430	-29.4%	(0.4%)
Number of Primary Care Visits, Specialist	1.190	1.820	-34.6%	(0.3%)
Any Consultations with General/Family Practitioner	0.007	0.007	2.3%	(3.5%) NS
Any Consultations with Internist	0.047	0.058	-19.3%	(0.7%)
Any Consultations with Specialist	0.108	0.156	-30.6%	(0.6%)
Total RVUs, Consultations with General/Family Practitioner	0.752	0.757	-0.6%	(4.4%) NS
Total RVUs, Consultations with Internist	5.950	8.300	-28.3%	(1.2%)
Total RVUs, Consultations with Specialist	14.300	23.900	-40.1%	(0.6%)
Number of Consultations with General/Family Practitioner	0.012	0.011	9.6%	(5.0%) NS
Number of Consultations with Internist	0.084	0.115	-27.2%	(1.9%)
Number of Consultations with Specialist	0.222	0.334	-33.7%	(0.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-3 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the Rural South
Utilization of Cardiac Procedures and Selected Surgeries

	RURAL SOUTH	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.317	0.372	-14.7%	(0.2%)
Any Cardiac Ultrasounds	0.032	0.044	-26.4%	(0.7%)
Any Cardiac Catheterizations	0.013	0.014	-9.6%	(2.2%)
Any PCTAs	0.001	0.001	-7.5%	(7.3%) NS
Any CABGs	0.003	0.003	0.9%	(3.5%) NS
Total RVUs, EKGs	20.800	26.600	-21.8%	(0.4%)
Total RVUs, Cardiac Ultrasounds	4.990	7.400	-32.6%	(1.1%)
Total RVUs, Cardiac Catheterizations	9.650	10.400	-7.0%	(2.5%)
Total RVUs, PCTAs	1.640	1.740	-6.0%	(7.4%) NS
Total RVUs, CABGs	12.200	12.100	0.7%	(3.5%) NS
Number of EKGs	0.797	0.973	-18.1%	(0.6%)
Number of Cardiac Ultrasounds	0.045	0.069	-34.4%	(0.8%)
Number of Cardiac Catheterizations	0.017	0.021	-18.3%	(2.5%)
Number of PCTAs	0.001	0.001	-6.9%	(7.9%) NS
Number of CABGs	0.003	0.003	-0.3%	(3.5%) NS
Any Cataract Lens Surgeries	0.026	0.026	-0.6%	(1.1%) NS
Any Joint Prostheses	0.004	0.005	-19.4%	(2.3%)
Any Cholecystectomies	0.006	0.005	20.4%	(3.2%)
Any Hysterectomies	0.002	0.002	6.1%	(4.5%) NS
Any TURPs	0.008	0.008	-0.3%	(2.5%) NS
Total RVUs, Cataract Lens Surgeries	48.100	46.400	3.6%	(1.2%)
Total RVUs, Joint Prostheses	10.400	12.800	-18.4%	(2.8%)
Total RVUs, Cholecystectomies	5.340	4.420	20.7%	(3.5%)
Total RVUs, Hysterectomies	1.910	1.860	2.8%	(5.0%) NS
Total RVUs, TURPs	9.180	9.200	-0.2%	(2.4%) NS
Number of Cataract Lens Surgeries	0.031	0.030	2.7%	(1.3%)
Number of Joint Prostheses	0.005	0.006	-19.1%	(2.8%)
Number of Cholecystectomies	0.006	0.005	20.3%	(3.5%)
Number of Hysterectomies	0.002	0.002	3.8%	(5.0%) NS
Number of TURPs	0.008	0.008	-0.0%	(2.4%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-3 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the Rural South
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	RURAL SOUTH	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.046	0.059	-22.2%	(0.8%)
Any Upper GI Endoscopies	0.021	0.021	0.2%	(1.9%) NS
Any Other Endoscopies	0.034	0.036	-6.7%	(0.8%)
Any Arthroscopies	0.001	0.001	-27.9%	(1.4%)
Total RVUs, Lower GI Endoscopies	12.100	14.900	-18.7%	(1.1%)
Total RVUs, Upper GI Endoscopies	8.290	8.650	-4.2%	(2.0%)
Total RVUs, Other Endoscopies	9.940	11.100	-10.2%	(1.3%)
Total RVUs, Arthroscopies	0.864	1.210	-28.4%	(1.8%)
Any Radiology Services	0.478	0.505	-5.2%	(0.2%)
Any CAT Scans	0.076	0.085	-10.9%	(0.8%)
Any MRIs	0.002	0.003	-54.4%	(2.6%)
Any Nuclear Imaging Services	0.052	0.062	-16.0%	(1.4%)
Any Non-Cardiac Ultrasounds	0.077	0.080	-3.8%	(0.6%)
Total RVUs, Radiology Services	79.500	91.200	-12.9%	(0.6%)
Total RVUs, Cat Scans	12.600	14.700	-13.8%	(0.8%)
Total RVUs, MRIs	0.565	1.370	-58.7%	(3.3%)
Total RVUs, Nuclear Imaging Services	4.930	6.940	-29.0%	(1.8%)
Total RVUs, Non-Cardiac Ultrasounds	7.530	8.630	-12.8%	(1.3%)
Any Mammograms	0.030	0.046	-35.7%	(1.0%)
Any Pap Smears	0.022	0.027	-18.4%	(2.1%)
Any Pneumonia Vaccines	0.011	0.011	1.5%	(2.7%) NS
Any Influenza Vaccines	0.000	0.000	-14.3%	(13.9%) NS
Total RVUs, Mammograms	1.400	2.390	-41.6%	(1.0%)
Total RVUs, Pap Smears	0.197	0.248	-20.5%	(2.3%)
Total RVUs, Pneumonia Vaccines	0.113	0.371	-69.5%	(4.4%)
Total RVUs, Influenza Vaccines	0.002	0.002	-11.0%	(16.9%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-3 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Living in the Rural South
Hospital Outpatient and Inpatient Services and Mortality Rate

	RURAL SOUTH	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.170	0.174	-2.2%	(0.2%)
Number of Visits/ER Services	0.362	0.474	-23.6%	(0.8%)
Charges, Visits/ER Services	12.100	22.700	-46.5%	(0.7%)
Charges, All Services	247.000	320.000	-22.7%	(0.9%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.012	0.029	-57.3%	(0.6%)
Number of Visits/ER Services	0.038	0.111	-65.4%	(1.6%)
Charges, Visits/ER Services	1.220	5.530	-77.9%	(1.2%)
Charges, All Services	14.300	30.000	-52.5%	(1.6%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.007	0.015	-49.1%	(1.8%)
Number of Visits/ER Services	0.024	0.065	-63.5%	(2.1%)
Charges, Visits/ER Services	0.654	2.750	-76.3%	(1.4%)
Charges, All Services	8.170	14.600	-44.1%	(3.8%)
Inpatient Services, Any Hospital				
Discharges, Total	0.394	0.332	18.5%	(0.9%)
Discharges, ACS DRGs	0.092	0.068	36.8%	(1.5%)
Discharges, Low Variation DRGs	0.020	0.016	21.0%	(1.7%)
Admitted Through ER	0.133	0.133	0.3%	(1.1%) NS
Outlier, Day or Cost	0.011	0.012	-6.3%	(2.7%)
Discharged Dead	0.025	0.021	15.2%	(2.2%)
All Deaths				
Mortality Rate	0.050	0.048	4.2%	(1.1%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-4: Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 35 Persons Per Square Mile
Utilization by Broad Categories of Service

	UNDER 35	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	157,000	1,335,000		
Any Services	0.819	0.838	-2.3%	(0.1%)
Total RVUs, All Services	647.000	781.000	-17.2%	(0.4%)
Number of Services, Total	16.400	19.800	-17.1%	(0.4%)
Any Non-Inpatient Services	0.813	0.832	-2.3%	(0.1%)
Total RVUs, Non-Inpatient Services	357.000	438.000	-18.6%	(0.3%)
Number of Non-Inpatient Services	11.800	14.200	-16.9%	(0.3%)
Any Primary Care Services	0.749	0.760	-1.4%	(0.2%)
Total RVUs, Primary Care Services	104.000	124.000	-15.5%	(0.3%)
Number of Primary Care Services	4.280	4.670	-8.2%	(0.3%)
Any Preventive Care Services	0.062	0.075	-17.1%	(1.0%)
Total RVUs, Preventive Care Services	2.080	2.940	-29.2%	(3.0%)
Number of Preventive Care Services	0.092	0.113	-19.0%	(5.8%)
Any Hi-Tech Services	0.212	0.257	-17.3%	(0.5%)
Total RVUs, Hi-Tech Services	89.400	106.000	-15.7%	(1.0%)
Number of Hi-Tech Services	0.424	0.572	-25.9%	(0.5%)
Any OBRA89 Overvalued Procedures	0.313	0.406	-23.0%	(0.3%)
Total RVUs, OBRA89 Overvalued Procedures	142.000	159.000	-10.5%	(1.0%)
Number of OBRA89 Overvalued Procedures	0.785	1.150	-32.0%	(0.6%)
Any Services with General/Family Practitioner	0.495	0.353	40.2%	(0.4%)
Any Services with Internist	0.275	0.409	-32.8%	(0.3%)
Any Services with Surgeon	0.417	0.523	-20.2%	(0.2%)
Any Services with Medical Specialist	0.439	0.490	-10.4%	(0.3%)
Any Services with Group/Miscellaneous	0.358	0.452	-20.7%	(0.2%)
Total RVUs with General/Family Practitioner	113.000	75.200	50.4%	(1.2%)
Total RVUs with Internist	85.800	139.000	-38.5%	(0.7%)
Total RVUs with Surgeon	242.000	294.000	-17.7%	(0.9%)
Total RVUs with Medical Specialist	133.000	191.000	-30.5%	(0.4%)
Total RVUs with Group/Miscellaneous	77.800	86.100	-9.7%	(1.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-4 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 35 Persons Per Square Mile
Utilization of Visits and Consultations

	UNDER 35	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.749	0.760	-1.4%	(0.2%)
Total RVUs, Primary Care Visits	105.000	124.000	-15.7%	(0.3%)
Number of Primary Care Visits	4.280	4.670	-8.2%	(0.3%)
Any Office Visits	0.699	0.689	1.4%	(0.3%)
Total RVUs, Office Visits	88.200	101.000	-12.4%	(0.3%)
Number of Office Visits	3.670	3.870	-5.4%	(0.3%)
Any ER/OPD Visits	0.139	0.181	-23.4%	(0.3%)
Total RVUs, ER/OPD Visits	7.170	11.400	-36.9%	(0.8%)
Number of ER/OPD Visits	0.240	0.343	-30.1%	(0.4%)
Any Consultations	0.131	0.184	-29.1%	(0.4%)
Total RVUs, Consultations	18.800	33.000	-43.0%	(1.4%)
Number of Consultations	0.271	0.463	-41.4%	(1.4%)
Any Primary Care Visits, General/Family Practitioner	0.465	0.331	40.8%	(0.5%)
Any Primary Care Visits, Internist	0.206	0.339	-39.3%	(0.4%)
Any Primary Care Visits, Specialist	0.393	0.470	-16.3%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	51.300	36.900	38.9%	(0.9%)
Total RVUs, Primary Care Visits, Internist	19.900	38.300	-48.1%	(0.4%)
Total RVUs, Primary Care Visits, Specialist	33.400	48.900	-31.7%	(0.5%)
Number of Primary Care Visits, General/Family Practitioner	2.160	1.430	50.6%	(0.9%)
Number of Primary Care Visits, Internist	0.792	1.450	-45.3%	(0.5%)
Number of Primary Care Visits, Specialist	1.330	1.790	-25.4%	(0.5%)
Any Consultations with General/Family Practitioner	0.006	0.007	-22.1%	(2.8%)
Any Consultations with Internist	0.041	0.059	-30.8%	(0.6%)
Any Consultations with Specialist	0.106	0.155	-31.9%	(0.5%)
Total RVUs, Consultations with General/Family Practitioner	0.508	0.786	-35.4%	(2.1%)
Total RVUs, Consultations with Internist	4.890	8.380	-41.6%	(0.6%)
Total RVUs, Consultations with Specialist	13.400	23.800	-43.7%	(1.9%)
Number of Consultations with General/Family Practitioner	0.008	0.012	-31.5%	(2.5%)
Number of Consultations with Internist	0.066	0.116	-43.5%	(1.0%)
Number of Consultations with Specialist	0.198	0.335	-41.0%	(1.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-4 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 35 Persons Per Square Mile
Utilization of Cardiac Procedures and Selected Surgeries**

	UNDER 35	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.275	0.375	-26.6%	(0.4%)
Any Cardiac Ultrasounds	0.027	0.044	-38.6%	(0.7%)
Any Cardiac Catheterizations	0.013	0.015	-13.6%	(2.9%)
Any PCTAs	0.001	0.001	0.5%	(5.9%) NS
Any CABGs	0.003	0.003	-6.9%	(5.6%) NS
Total RVUs, EKGs	17.400	26.900	-35.3%	(0.6%)
Total RVUs, Cardiac Ultrasounds	4.390	7.420	-40.8%	(1.1%)
Total RVUs, Cardiac Catheterizations	9.350	10.400	-10.1%	(3.3%)
Total RVUs, PCTAs	1.740	1.730	0.8%	(7.1%) NS
Total RVUs, CABGs	11.400	12.200	-6.4%	(5.7%) NS
Number of EKGs	0.638	0.989	-35.5%	(0.5%)
Number of Cardiac Ultrasounds	0.040	0.069	-41.5%	(1.0%)
Number of Cardiac Catheterizations	0.017	0.021	-16.6%	(3.5%)
Number of PCTAs	0.001	0.001	-0.3%	(6.6%) NS
Number of CABGs	0.003	0.003	-6.1%	(5.8%) NS
Any Cataract Lens Surgeries	0.026	0.026	-3.2%	(1.1%)
Any Joint Prostheses	0.006	0.005	23.4%	(4.7%)
Any Cholecystectomies	0.005	0.005	14.1%	(2.6%)
Any Hysterectomies	0.002	0.002	23.7%	(8.7%)
Any TURPs	0.008	0.008	0.8%	(3.3%) NS
Total RVUs, Cataract Lens Surgeries	45.900	46.800	-1.9%	(1.4%) NS
Total RVUs, Joint Prostheses	15.100	12.200	23.3%	(5.3%)
Total RVUs, Cholecystectomies	5.170	4.460	15.9%	(2.8%)
Total RVUs, Hysterectomies	2.230	1.820	22.1%	(7.9%)
Total RVUs, TURPs	9.210	9.200	0.1%	(3.2%) NS
Number of Cataract Lens Surgeries	0.030	0.030	-2.7%	(1.3%)
Number of Joint Prostheses	0.007	0.006	20.9%	(5.6%)
Number of Cholecystectomies	0.006	0.005	14.9%	(2.9%)
Number of Hysterectomies	0.002	0.002	22.2%	(8.4%)
Number of TURPs	0.008	0.008	0.7%	(3.4%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-4 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 35 Persons Per Square Mile
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	UNDER 35	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.047	0.059	-19.3%	(0.8%)
Any Upper GI Endoscopies	0.018	0.022	-16.5%	(1.3%)
Any Other Endoscopies	0.031	0.036	-15.3%	(0.8%)
Any Arthroscopies	0.001	0.001	-7.6%	(6.1%) NS
Total RVUs, Lower GI Endoscopies	11.100	14.900	-25.6%	(1.1%)
Total RVUs, Upper GI Endoscopies	7.120	8.790	-19.0%	(2.1%)
Total RVUs, Other Endoscopies	9.040	11.200	-19.0%	(1.4%)
Total RVUs, Arthroscopies	1.070	1.170	-8.5%	(7.7%) NS
Any Radiology Services	0.467	0.505	-7.6%	(0.3%)
Any CAT Scans	0.066	0.086	-23.1%	(0.7%)
Any MRIs	0.002	0.003	-41.6%	(3.5%)
Any Nuclear Imaging Services	0.046	0.062	-26.4%	(1.0%)
Any Non-Cardiac Ultrasounds	0.070	0.080	-13.5%	(1.0%)
Total RVUs, Radiology Services	74.500	91.600	-18.6%	(0.7%)
Total RVUs, Cat Scans	11.300	14.800	-23.8%	(0.6%)
Total RVUs, MRIs	0.815	1.320	-38.3%	(4.5%)
Total RVUs, Nuclear Imaging Services	4.580	6.940	-34.0%	(1.6%)
Total RVUs, Non-Cardiac Ultrasounds	6.750	8.700	-22.5%	(1.2%)
Any Mammograms	0.033	0.046	-27.5%	(1.5%)
Any Pap Smears	0.022	0.027	-20.8%	(1.6%)
Any Pneumonia Vaccines	0.013	0.011	26.0%	(4.3%)
Any Influenza Vaccines	0.000	0.000	-23.9%	(9.1%)
Total RVUs, Mammograms	1.560	2.350	-33.4%	(1.5%)
Total RVUs, Pap Smears	0.193	0.247	-21.9%	(1.6%)
Total RVUs, Pneumonia Vaccines	0.321	0.341	-5.7%	(25.2%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-20.1%	(12.8%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-4 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 35 Persons Per Square Mile
Hospital Outpatient and Inpatient Services and Mortality Rate**

	UNDER 35	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.168	0.174	-3.2%	(0.4%)
Number of Visits/ER Services	0.395	0.467	-15.5%	(0.8%)
*Charges, Visits/ER Services	15.200	22.000	-30.8%	(0.7%)
Charges, All Services	255.000	317.000	-19.7%	(1.0%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.012	0.028	-57.7%	(1.4%)
Number of Visits/ER Services	0.037	0.109	-66.4%	(1.6%)
Charges, Visits/ER Services	1.270	5.390	-76.4%	(1.0%)
Charges, All Services	13.900	29.600	-53.0%	(1.9%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.006	0.015	-57.5%	(2.1%)
Number of Visits/ER Services	0.021	0.064	-68.0%	(2.2%)
Charges, Visits/ER Services	0.581	2.690	-78.4%	(1.6%)
Charges, All Services	7.660	14.500	-47.1%	(3.4%)
Inpatient Services, Any Hospital				
Discharges, Total	0.364	0.337	8.1%	(0.6%)
Discharges, ACS DRGs	0.081	0.069	17.3%	(0.9%)
Discharges, Low Variation DRGs	0.019	0.016	16.5%	(2.3%)
Admitted Through ER	0.099	0.137	-27.4%	(0.6%)
Outlier, Day or Cost	0.008	0.012	-34.3%	(1.5%)
Discharged Dead	0.020	0.022	-10.8%	(1.5%)
All Deaths				
Mortality Rate	0.046	0.048	-5.4%	(1.2%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-5: Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 6 Persons Per Square Mile
Utilization by Broad Categories of Service

	UNDER 6	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	17,700	1,474,000		
Any Services	0.806	0.837	-3.7%	(0.3%)
Total RVUs, All Services	625.000	768.000	-18.6%	(1.4%)
Number of Services, Total	15.100	19.500	-22.6%	(1.1%)
Any Non-Inpatient Services	0.798	0.830	-3.8%	(0.3%)
Total RVUs, Non-Inpatient Services	341.000	431.000	-20.9%	(1.1%)
Number of Non-Inpatient Services	11.000	14.000	-21.7%	(0.9%)
Any Primary Care Services	0.734	0.759	-3.3%	(0.4%)
Total RVUs, Primary Care Services	94.500	122.000	-22.5%	(0.8%)
Number of Primary Care Services	3.950	4.640	-14.8%	(0.8%)
Any Preventive Care Services	0.062	0.074	-15.7%	(3.2%)
Total RVUs, Preventive Care Services	2.200	2.860	-22.9%	(10.1%)
Number of Preventive Care Services	0.099	0.111	-11.4%	(22.6%) NS
Any Hi-Tech Services	0.209	0.252	-17.2%	(1.2%)
Total RVUs, Hi-Tech Services	89.100	104.000	-14.7%	(2.3%)
Number of Hi-Tech Services	0.407	0.558	-27.1%	(2.0%)
Any OBRA89 Overvalued Procedures	0.300	0.398	-24.4%	(0.9%)
Total RVUs, OBRA89 Overvalued Procedures	148.000	157.000	-6.2%	(2.1%)
Number of OBRA89 Overvalued Procedures	0.708	1.120	-36.8%	(1.0%)
Any Services with General/Family Practitioner	0.491	0.366	34.0%	(1.2%)
Any Services with Internist	0.252	0.396	-36.4%	(0.8%)
Any Services with Surgeon	0.415	0.513	-19.0%	(0.5%)
Any Services with Medical Specialist	0.424	0.485	-12.6%	(0.7%)
Any Services with Group/Miscellaneous	0.350	0.443	-20.9%	(1.0%)
Total RVUs with General/Family Practitioner	105.000	78.900	32.4%	(1.9%)
Total RVUs with Internist	74.100	134.000	-44.9%	(1.8%)
Total RVUs with Surgeon	247.000	289.000	-14.5%	(1.7%)
Total RVUs with Medical Specialist	123.000	186.000	-33.7%	(2.3%)
Total RVUs with Group/Miscellaneous	79.300	85.300	-7.0%	(3.6%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-5 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 6 Persons Per Square Mile
Utilization of Visits and Consultations

	UNDER 6	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.734	0.759	-3.3%	(0.4%)
Total RVUs, Primary Care Visits	94.500	122.000	-22.8%	(0.8%)
Number of Primary Care Visits	3.950	4.640	-14.8%	(0.8%)
Any Office Visits	0.691	0.690	0.1%	(0.6%) NS
Total RVUs, Office Visits	81.300	99.600	-18.4%	(1.0%)
Number of Office Visits	3.430	3.860	-11.0%	(0.9%)
Any ER/OPD Visits	0.105	0.178	-40.8%	(0.7%)
Total RVUs, ER/OPD Visits	4.650	11.000	-57.7%	(1.2%)
Number of ER/OPD Visits	0.161	0.334	-51.8%	(1.5%)
Any Consultations	0.126	0.179	-29.7%	(1.5%)
Total RVUs, Consultations	16.900	31.600	-46.6%	(1.4%)
Number of Consultations	0.248	0.445	-44.3%	(1.7%)
Any Primary Care Visits, General/Family Practitioner	0.456	0.343	32.6%	(1.1%)
Any Primary Care Visits, Internist	0.193	0.326	-40.9%	(0.8%)
Any Primary Care Visits, Specialist	0.391	0.462	-15.4%	(0.9%)
Total RVUs, Primary Care Visits, General/Family Practitioner	46.000	38.400	19.8%	(1.9%)
Total RVUs, Primary Care Visits, Internist	16.900	36.600	-53.8%	(0.7%)
Total RVUs, Primary Care Visits, Specialist	31.600	47.400	-33.4%	(1.4%)
Number of Primary Care Visits, General/Family Practitioner	1.980	1.510	31.8%	(2.0%)
Number of Primary Care Visits, Internist	0.685	1.390	-50.6%	(0.7%)
Number of Primary Care Visits, Specialist	1.280	1.740	-26.5%	(1.6%)
Any Consultations with General/Family Practitioner	0.007	0.007	-8.8%	(6.0%) NS
Any Consultations with Internist	0.038	0.057	-33.6%	(2.3%)
Any Consultations with Specialist	0.101	0.150	-32.9%	(1.7%)
Total RVUs, Consultations with General/Family Practitioner	0.529	0.759	-30.3%	(5.6%)
Total RVUs, Consultations with Internist	4.530	8.040	-43.7%	(2.7%)
Total RVUs, Consultations with Specialist	11.800	22.800	-48.2%	(1.6%)
Number of Consultations with General/Family Practitioner	0.008	0.011	-29.1%	(5.6%)
Number of Consultations with Internist	0.064	0.111	-42.9%	(3.2%)
Number of Consultations with Specialist	0.176	0.322	-45.3%	(2.1%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-5 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 6 Persons Per Square Mile
Utilization of Cardiac Procedures and Selected Surgeries

	UNDER 6	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.262	0.366	-28.4%	(1.1%)
Any Cardiac Ultrasounds	0.025	0.043	-42.6%	(2.2%)
Any Cardiac Catheterizations	0.013	0.014	-7.6%	(6.7%) NS
Any PCTAs	0.001	0.001	-31.3%	(25.0%) NS
Any CABGs	0.003	0.003	1.7%	(13.2%) NS
Total RVUs, EKGs	16.000	26.000	-38.2%	(1.4%)
Total RVUs, Cardiac Ultrasounds	4.090	7.130	-42.6%	(3.6%)
Total RVUs, Cardiac Catheterizations	10.500	10.300	2.1%	(9.0%) NS
Total RVUs, PCTAs	1.270	1.730	-26.9%	(26.1%) NS
Total RVUs, CABGs	12.200	12.100	1.1%	(12.9%) NS
Number of EKGs	0.562	0.955	-41.2%	(1.2%)
Number of Cardiac Ultrasounds	0.036	0.066	-45.7%	(2.8%)
Number of Cardiac Catheterizations	0.019	0.020	-7.4%	(7.3%) NS
Number of PCTAs	0.001	0.001	-29.7%	(25.1%) NS
Number of CABGs	0.003	0.003	-0.7%	(12.8%) NS
Any Cataract Lens Surgeries	0.026	0.026	0.2%	(4.4%) NS
Any Joint Prostheses	0.006	0.005	27.0%	(13.5%) NS
Any Cholecystectomies	0.006	0.005	22.1%	(15.9%) NS
Any Hysterectomies	0.002	0.002	39.9%	(18.8%)
Any TURPs	0.008	0.008	2.0%	(6.9%) NS
Total RVUs, Cataract Lens Surgeries	46.600	46.700	-0.1%	(5.3%) NS
Total RVUs, Joint Prostheses	16.700	12.500	34.1%	(14.7%)
Total RVUs, Cholecystectomies	5.640	4.520	24.9%	(14.7%) NS
Total RVUs, Hysterectomies	2.580	1.860	38.7%	(21.3%) NS
Total RVUs, TURPs	9.190	9.200	-0.1%	(6.9%) NS
Number of Cataract Lens Surgeries	0.030	0.030	-1.2%	(5.1%) NS
Number of Joint Prostheses	0.008	0.006	29.4%	(14.0%)
Number of Cholecystectomies	0.006	0.005	23.8%	(15.4%) NS
Number of Hysterectomies	0.003	0.002	42.3%	(22.1%) NS
Number of TURPs	0.008	0.008	0.1%	(6.7%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-5 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 6 Persons Per Square Mile
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	UNDER 6	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.049	0.058	-14.7%	(2.3%)
Any Upper GI Endoscopies	0.016	0.021	-23.7%	(6.3%)
Any Other Endoscopies	0.029	0.036	-18.9%	(3.8%)
Any Arthroscopies	0.002	0.001	40.5%	(32.0%) NS
Total RVUs, Lower GI Endoscopies	10.900	14.600	-24.8%	(2.1%)
Total RVUs, Upper GI Endoscopies	6.680	8.630	-22.6%	(6.6%)
Total RVUs, Other Endoscopies	8.890	10.900	-18.8%	(5.9%)
Total RVUs, Arthroscopies	2.010	1.150	74.5%	(42.2%) NS
Any Radiology Services	0.462	0.502	-8.0%	(0.7%)
Any CAT Scans	0.062	0.084	-26.0%	(2.1%)
Any MRIs	0.002	0.003	-19.6%	(14.9%) NS
Any Nuclear Imaging Services	0.039	0.061	-35.9%	(2.1%)
Any Non-Cardiac Ultrasounds	0.068	0.079	-14.9%	(2.1%)
Total RVUs, Radiology Services	71.900	90.000	-20.1%	(1.8%)
Total RVUs, Cat Scans	10.500	14.500	-27.3%	(2.8%)
Total RVUs, MRIs	1.600	1.260	26.9%	(29.1%) NS
Total RVUs, Nuclear Imaging Services	4.070	6.720	-39.4%	(1.9%)
Total RVUs, Non-Cardiac Ultrasounds	6.740	8.510	-20.9%	(3.7%)
Any Mammograms	0.035	0.044	-21.3%	(3.1%)
Any Pap Smears	0.018	0.027	-32.0%	(2.8%)
Any Pneumonia Vaccines	0.014	0.011	33.2%	(10.2%)
Any Influenza Vaccines	0.000	0.000	9.8%	(39.2%) NS
Total RVUs, Mammograms	1.620	2.280	-28.7%	(3.1%)
Total RVUs, Pap Smears	0.160	0.242	-33.7%	(3.3%)
Total RVUs, Pneumonia Vaccines	0.417	0.337	23.6%	(59.3%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-1.9%	(35.6%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-5 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Counties Under 6 Persons Per Square Mile
Hospital Outpatient and Inpatient Services and Mortality Rate**

	UNDER 6	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.170	0.173	-2.1%	(1.7%) NS
Number of Visits/ER Services	0.465	0.460	1.1%	(3.2%) NS
Charges, Visits/ER Services	21.900	21.300	2.7%	(2.6%) NS
Charges, All Services	261.000	311.000	-16.3%	(3.0%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.009	0.027	-67.1%	(2.3%)
Number of Visits/ER Services	0.034	0.102	-66.5%	(6.1%)
Charges, Visits/ER Services	1.700	5.000	-66.0%	(3.8%)
Charges, All Services	11.900	28.100	-57.6%	(6.5%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.003	0.014	-77.5%	(3.7%)
Number of Visits/ER Services	0.010	0.060	-84.0%	(5.3%)
Charges, Visits/ER Services	0.320	2.500	-87.2%	(4.3%)
Charges, All Services	6.190	13.800	-55.3%	(11.5%)
Inpatient Services, Any Hospital				
Discharges, Total	0.367	0.340	7.9%	(1.5%)
Discharges, ACS DRGs	0.075	0.071	6.2%	(2.9%)
Discharges, Low Variation DRGs	0.018	0.017	11.0%	(6.9%) NS
Admitted Through ER	0.077	0.133	-42.1%	(1.7%)
Outlier, Day or Cost	0.007	0.012	-41.9%	(7.5%)
Discharged Dead	0.017	0.022	-23.0%	(4.2%)
All Deaths				
Mortality Rate	0.044	0.048	-8.5%	(4.6%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-6: Utilization Rates Per Beneficiary, 1986
Beneficiaries in Health Professional Shortage Areas (HPSAs)
Utilization by Broad Categories of Service

	HPSA	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	158,000	1,334,000		
Any Services	0.804	0.840	-4.4%	(0.2%)
Total RVUs, All Services	710.000	773.000	-8.2%	(0.5%)
Number of Services, Total	18.100	19.600	-7.5%	(0.5%)
Any Non-Inpatient Services	0.796	0.834	-4.5%	(0.2%)
Total RVUs, Non-Inpatient Services	378.000	436.000	-13.3%	(0.5%)
Number of Non-Inpatient Services	12.500	14.200	-11.9%	(0.4%)
Any Primary Care Services	0.731	0.762	-4.2%	(0.2%)
Total RVUs, Primary Care Services	116.000	122.000	-5.2%	(0.3%)
Number of Primary Care Services	4.510	4.640	-2.9%	(0.3%)
Any Preventive Care Services	0.057	0.076	-24.6%	(0.8%)
Total RVUs, Preventive Care Services	2.020	2.950	-31.5%	(3.8%)
Number of Preventive Care Services	0.094	0.113	-16.7%	(9.2%) NS
Any Hi-Tech Services	0.228	0.255	-10.6%	(0.4%)
Total RVUs, Hi-Tech Services	93.900	105.000	-10.9%	(1.1%)
Number of Hi-Tech Services	0.500	0.563	-11.2%	(0.6%)
Any OBRA89 Overvalued Procedures	0.357	0.401	-11.0%	(0.4%)
Total RVUs, OBRA89 Overvalued Procedures	144.000	159.000	-9.3%	(0.8%)
Number of OBRA89 Overvalued Procedures	1.020	1.120	-9.0%	(0.7%)
Any Services with General/Family Practitioner	0.426	0.361	17.9%	(0.6%)
Any Services with Internist	0.328	0.403	-18.6%	(0.3%)
Any Services with Surgeon	0.428	0.521	-17.8%	(0.2%)
Any Services with Medical Specialist	0.449	0.488	-8.0%	(0.4%)
Any Services with Group/Miscellaneous	0.382	0.449	-14.8%	(0.3%)
Total RVUs with General/Family Practitioner	99.100	76.900	28.8%	(1.0%)
Total RVUs with Internist	117.000	136.000	-13.7%	(0.9%)
Total RVUs with Surgeon	258.000	292.000	-11.7%	(0.8%)
Total RVUs with Medical Specialist	162.000	188.000	-14.1%	(0.8%)
Total RVUs with Group/Miscellaneous	79.900	85.900	-6.9%	(1.0%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-6 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Health Professional Shortage Areas (HPSAs)
Utilization of Visits and Consultations

	HPSA	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.731	0.762	-4.2%	(0.2%)
Total RVUs, Primary Care Visits	116.000	123.000	-5.3%	(0.3%)
Number of Primary Care Visits	4.510	4.640	-2.9%	(0.3%)
Any Office Visits	0.654	0.695	-5.8%	(0.2%)
Total RVUs, Office Visits	92.800	100.000	-7.3%	(0.4%)
Number of Office Visits	3.680	3.870	-4.9%	(0.4%)
Any ER/OPD Visits	0.187	0.176	6.7%	(0.8%)
Total RVUs, ER/OPD Visits	12.600	10.700	17.0%	(1.1%)
Number of ER/OPD Visits	0.403	0.323	24.5%	(1.2%)
Any Consultations	0.153	0.182	-15.7%	(0.6%)
Total RVUs, Consultations	28.400	31.800	-10.6%	(2.7%)
Number of Consultations	0.402	0.447	-10.1%	(2.3%)
Any Primary Care Visits, General/Family Practitioner	0.401	0.338	18.5%	(0.6%)
Any Primary Care Visits, Internist	0.249	0.334	-25.4%	(0.3%)
Any Primary Care Visits, Specialist	0.405	0.468	-13.4%	(0.3%)
Total RVUs, Primary Care Visits, General/Family Practitioner	47.700	37.400	27.6%	(0.9%)
Total RVUs, Primary Care Visits, Internist	28.000	37.300	-24.9%	(0.4%)
Total RVUs, Primary Care Visits, Specialist	40.500	48.000	-15.7%	(0.4%)
Number of Primary Care Visits, General/Family Practitioner	1.920	1.460	31.3%	(0.9%)
Number of Primary Care Visits, Internist	1.080	1.410	-24.0%	(0.5%)
Number of Primary Care Visits, Specialist	1.510	1.760	-14.2%	(0.4%)
Any Consultations with General/Family Practitioner	0.007	0.007	-10.3%	(2.3%)
Any Consultations with Internist	0.052	0.058	-10.2%	(1.0%)
Any Consultations with Specialist	0.126	0.153	-17.5%	(0.6%)
Total RVUs, Consultations with General/Family Practitioner	0.701	0.763	-8.2%	(3.7%)
Total RVUs, Consultations with Internist	7.450	8.070	-7.7%	(2.0%)
Total RVUs, Consultations with Specialist	20.300	23.000	-11.7%	(3.5%)
Number of Consultations with General/Family Practitioner	0.011	0.011	-4.0%	(5.7%) NS
Number of Consultations with Internist	0.104	0.112	-7.0%	(2.8%)
Number of Consultations with Specialist	0.287	0.324	-11.4%	(2.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-6 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Health Professional Shortage Areas (HPSAs)
Utilization of Cardiac Procedures and Selected Surgeries**

	HPSA	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.326	0.369	-11.9%	(0.5%)
Any Cardiac Ultrasounds	0.039	0.043	-8.0%	(1.3%)
Any Cardiac Catheterizations	0.013	0.014	-9.6%	(2.1%)
Any PCTAs	0.001	0.001	-10.8%	(3.5%)
Any CABGs	0.003	0.003	-13.4%	(2.6%)
Total RVUs, EKGs	22.500	26.300	-14.4%	(0.8%)
Total RVUs, Cardiac Ultrasounds	6.390	7.170	-10.9%	(1.6%)
Total RVUs, Cardiac Catheterizations	9.280	10.400	-10.9%	(2.6%)
Total RVUs, PCTAs	1.610	1.740	-7.9%	(3.3%)
Total RVUs, CABGs	10.500	12.300	-14.1%	(2.9%)
Number of EKGs	0.871	0.960	-9.3%	(0.8%)
Number of Cardiac Ultrasounds	0.060	0.066	-9.0%	(1.6%)
Number of Cardiac Catheterizations	0.018	0.021	-13.7%	(2.5%)
Number of PCTAs	0.001	0.001	-7.0%	(3.9%) NS
Number of CABGs	0.003	0.003	-14.0%	(2.5%)
Any Cataract Lens Surgeries	0.025	0.026	-3.9%	(1.3%)
Any Joint Prostheses	0.004	0.005	-13.3%	(5.1%)
Any Cholecystectomies	0.005	0.005	3.8%	(3.2%) NS
Any Hysterectomies	0.002	0.002	-3.5%	(7.1%) NS
Any TURPs	0.008	0.008	0.3%	(3.3%) NS
Total RVUs, Cataract Lens Surgeries	45.600	46.800	-2.6%	(1.7%) NS
Total RVUs, Joint Prostheses	10.900	12.700	-13.9%	(6.0%)
Total RVUs, Cholecystectomies	4.750	4.510	5.4%	(3.7%) NS
Total RVUs, Hysterectomies	1.800	1.870	-3.6%	(6.8%) NS
Total RVUs, TURPs	9.190	9.200	-0.1%	(3.5%) NS
Number of Cataract Lens Surgeries	0.030	0.030	-2.7%	(1.7%) NS
Number of Joint Prostheses	0.005	0.006	-13.1%	(5.5%)
Number of Cholecystectomies	0.005	0.005	5.7%	(4.0%) NS
Number of Hysterectomies	0.002	0.002	-4.9%	(6.5%) NS
Number of TURPs	0.008	0.008	0.4%	(3.3%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-6 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Health Professional Shortage Areas (HPSAs)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	HPSA	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.045	0.059	-24.4%	(0.9%)
Any Upper GI Endoscopies	0.022	0.021	1.9%	(1.8%) NS
Any Other Endoscopies	0.033	0.036	-10.3%	(1.1%)
Any Arthroscopies	0.001	0.001	-30.2%	(4.6%)
Total RVUs, Lower GI Endoscopies	11.600	14.900	-21.8%	(1.3%)
Total RVUs, Upper GI Endoscopies	8.680	8.600	1.0%	(2.6%) NS
Total RVUs, Other Endoscopies	9.830	11.100	-11.0%	(1.8%)
Total RVUs, Arthroscopies	0.816	1.200	-32.3%	(5.0%)
Any Radiology Services	0.471	0.505	-6.7%	(0.3%)
Any CAT Scans	0.079	0.085	-6.9%	(0.9%)
Any MRIs	0.002	0.003	-42.6%	(3.9%)
Any Nuclear Imaging Services	0.055	0.061	-9.4%	(1.3%)
Any Non-Cardiac Ultrasounds	0.078	0.079	-1.9%	(0.6%)
Total RVUs, Radiology Services	81.900	90.700	-9.7%	(0.7%)
Total RVUs, Cat Scans	13.200	14.500	-8.9%	(1.2%)
Total RVUs, MRIs	0.704	1.330	-47.2%	(3.9%)
Total RVUs, Nuclear Imaging Services	5.860	6.780	-13.5%	(1.4%)
Total RVUs, Non-Cardiac Ultrasounds	7.930	8.560	-7.4%	(0.9%)
Any Mammograms	0.031	0.046	-32.2%	(0.8%)
Any Pap Smears	0.021	0.027	-22.8%	(1.5%)
Any Pneumonia Vaccines	0.010	0.011	-7.1%	(2.5%)
Any Influenza Vaccines	0.000	0.000	-21.3%	(16.7%) NS
Total RVUs, Mammograms	1.460	2.360	-38.4%	(0.8%)
Total RVUs, Pap Smears	0.189	0.247	-23.7%	(1.9%)
Total RVUs, Pneumonia Vaccines	0.372	0.334	11.6%	(30.2%) NS
Total RVUs, Influenza Vaccines	0.002	0.003	-26.0%	(15.9%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-6 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Health Professional Shortage Areas (HPSAs)
Hospital Outpatient and Inpatient Services and Mortality Rate**

	HPSA	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.206	0.169	21.9%	(0.4%)
Number of Visits/ER Services	0.635	0.439	44.5%	(1.2%)
Charges, Visits/ER Services	29.300	20.400	43.7%	(2.3%)
Charges, All Services	325.000	309.000	5.2%	(1.1%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.033	0.026	28.6%	(1.5%)
Number of Visits/ER Services	0.144	0.096	49.5%	(3.0%)
Charges, Visits/ER Services	8.460	4.540	86.1%	(6.1%)
Charges, All Services	32.100	27.500	16.8%	(2.8%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.020	0.013	58.9%	(3.5%)
Number of Visits/ER Services	0.095	0.056	71.3%	(5.0%)
Charges, Visits/ER Services	5.000	2.170	130.7%	(12.0%)
Charges, All Services	17.800	13.300	34.4%	(5.4%)
Inpatient Services, Any Hospital				
Discharges, Total	0.381	0.335	13.6%	(0.9%)
Discharges, ACS DRGs	0.088	0.069	28.0%	(1.5%)
Discharges, Low Variation DRGs	0.017	0.016	5.8%	(2.6%)
Admitted Through ER	0.139	0.132	4.9%	(1.4%)
Outlier, Day or Cost	0.013	0.012	7.4%	(1.9%)
Discharged Dead	0.024	0.022	11.1%	(2.3%)
All Deaths				
Mortality Rate	0.050	0.048	5.4%	(1.5%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-7: Utilization Rates Per Beneficiary, 1986
HPSAs in Urban (MSA) Areas
Utilization by Broad Categories of Service

	URBAN HPSA	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	59,700	1,432,000		
Any Services	0.798	0.838	-4.8%	(0.2%)
Total RVUs, All Services	811.000	765.000	6.1%	(0.5%)
Number of Services, Total	20.800	19.400	7.6%	(0.6%)
Any Non-Inpatient Services	0.790	0.832	-5.0%	(0.2%)
Total RVUs, Non-Inpatient Services	434.000	429.000	1.1%	(0.9%) NS
Number of Non-Inpatient Services	14.200	14.000	1.3%	(0.7%) NS
Any Primary Care Services	0.720	0.760	-5.3%	(0.3%)
Total RVUs, Primary Care Services	129.000	121.000	6.5%	(0.5%)
Number of Primary Care Services	4.810	4.620	4.2%	(0.6%)
Any Preventive Care Services	0.059	0.075	-20.6%	(1.1%)
Total RVUs, Preventive Care Services	2.520	2.860	-11.9%	(8.2%) NS
Number of Preventive Care Services	0.123	0.111	11.1%	(21.5%) NS
Any Hi-Tech Services	0.254	0.252	0.7%	(0.6%) NS
Total RVUs, Hi-Tech Services	107.000	104.000	2.3%	(1.0%)
Number of Hi-Tech Services	0.615	0.554	11.0%	(1.2%)
Any OBRA89 Overvalued Procedures	0.406	0.396	2.5%	(0.6%)
Total RVUs, OBRA89 Overvalued Procedures	150.000	158.000	-5.0%	(1.1%)
Number of OBRA89 Overvalued Procedures	1.270	1.110	15.1%	(1.1%)
Any Services with General/Family Practitioner	0.330	0.369	-10.5%	(0.7%)
Any Services with Internist	0.386	0.395	-2.3%	(0.5%)
Any Services with Surgeon	0.462	0.513	-9.9%	(0.5%)
Any Services with Medical Specialist	0.466	0.485	-3.9%	(0.4%)
Any Services with Group/Miscellaneous	0.448	0.441	1.4%	(0.5%)
Total RVUs with General/Family Practitioner	76.700	79.300	-3.4%	(1.9%) NS
Total RVUs with Internist	155.000	133.000	16.7%	(1.2%)
Total RVUs with Surgeon	279.000	289.000	-3.4%	(1.2%)
Total RVUs with Medical Specialist	207.000	184.000	12.6%	(1.3%)
Total RVUs with Group/Miscellaneous	102.000	84.500	20.9%	(1.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-7 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Urban (MSA) Areas
Utilization of Visits and Consultations

	URBAN HPSA	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.720	0.760	-5.3%	(0.3%)
Total RVUs, Primary Care Visits	130.000	122.000	6.7%	(0.5%)
Number of Primary Care Visits	4.810	4.620	4.2%	(0.6%)
Any Office Visits	0.618	0.693	-10.8%	(0.3%)
Total RVUs, Office Visits	99.600	99.400	0.2%	(0.5%) NS
Number of Office Visits	3.800	3.850	-1.4%	(0.6%)
Any ER/OPD Visits	0.229	0.175	31.1%	(0.8%)
Total RVUs, ER/OPD Visits	18.100	10.600	70.8%	(1.4%)
Number of ER/OPD Visits	0.571	0.322	77.6%	(1.6%)
Any Consultations	0.193	0.178	8.6%	(0.8%)
Total RVUs, Consultations	42.000	31.000	35.6%	(6.0%)
Number of Consultations	0.577	0.437	32.2%	(4.8%)
Any Primary Care Visits, General/Family Practitioner	0.309	0.346	-10.8%	(0.8%)
Any Primary Care Visits, Internist	0.307	0.325	-5.6%	(0.4%)
Any Primary Care Visits, Specialist	0.443	0.462	-4.2%	(0.5%)
Total RVUs, Primary Care Visits, General/Family Practitioner	38.900	38.500	1.1%	(1.4%) NS
Total RVUs, Primary Care Visits, Internist	39.000	36.200	7.9%	(0.8%)
Total RVUs, Primary Care Visits, Specialist	51.900	47.000	10.4%	(0.7%)
Number of Primary Care Visits, General/Family Practitioner	1.480	1.510	-2.3%	(1.5%) NS
Number of Primary Care Visits, Internist	1.480	1.370	7.6%	(0.8%)
Number of Primary Care Visits, Specialist	1.860	1.730	7.2%	(0.7%)
Any Consultations with General/Family Practitioner	0.007	0.007	-1.3%	(4.6%) NS
Any Consultations with Internist	0.067	0.057	18.6%	(1.6%)
Any Consultations with Specialist	0.163	0.149	9.4%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	0.815	0.754	8.0%	(6.8%) NS
Total RVUs, Consultations with Internist	10.900	7.880	38.5%	(3.6%)
Total RVUs, Consultations with Specialist	30.300	22.400	35.6%	(8.5%)
Number of Consultations with General/Family Practitioner	0.012	0.011	3.6%	(9.4%) NS
Number of Consultations with Internist	0.154	0.109	41.3%	(5.0%)
Number of Consultations with Specialist	0.411	0.316	30.0%	(6.8%)

Source: PPRC analysis of Medicare BMAD IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-7 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Urban (MSA) Areas
Utilization of Cardiac Procedures and Selected Surgeries

	URBAN HPSA	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.378	0.364	3.9%	(0.7%)
Any Cardiac Ultrasounds	0.055	0.042	30.2%	(2.0%)
Any Cardiac Catheterizations	0.013	0.014	-5.9%	(3.0%) NS
Any PCTAs	0.001	0.001	-27.7%	(8.5%)
Any CABGs	0.002	0.003	-34.8%	(4.6%)
Total RVUs, EKGs	28.600	25.700	11.1%	(1.5%)
Total RVUs, Cardiac Ultrasounds	9.310	7.000	33.0%	(3.0%)
Total RVUs, Cardiac Catheterizations	9.250	10.300	-10.5%	(4.5%)
Total RVUs, PCTAs	1.260	1.750	-28.1%	(12.0%)
Total RVUs, CABGs	7.800	12.300	-36.4%	(4.8%)
Number of EKGs	1.110	0.944	17.9%	(1.1%)
Number of Cardiac Ultrasounds	0.089	0.065	37.1%	(2.5%)
Number of Cardiac Catheterizations	0.019	0.020	-6.2%	(3.9%) NS
Number of PCTAs	0.001	0.001	-28.8%	(11.5%)
Number of CABGs	0.002	0.003	-35.3%	(5.0%)
Any Cataract Lens Surgeries	0.025	0.026	-3.1%	(1.5%)
Any Joint Prostheses	0.004	0.005	-19.8%	(6.2%)
Any Cholecystectomies	0.004	0.005	-12.2%	(5.5%)
Any Hysterectomies	0.001	0.002	-24.9%	(7.9%)
Any TURPs	0.008	0.008	-0.5%	(3.8%) NS
Total RVUs, Cataract Lens Surgeries	46.000	46.700	-1.4%	(2.3%) NS
Total RVUs, Joint Prostheses	9.520	12.600	-24.7%	(6.0%)
Total RVUs, Cholecystectomies	4.110	4.550	-9.8%	(6.6%) NS
Total RVUs, Hysterectomies	1.450	1.880	-23.1%	(9.5%)
Total RVUs, TURPs	9.180	9.210	-0.3%	(3.8%) NS
Number of Cataract Lens Surgeries	0.030	0.030	-1.2%	(2.3%) NS
Number of Joint Prostheses	0.005	0.006	-21.3%	(5.6%)
Number of Cholecystectomies	0.005	0.005	-9.9%	(6.5%) NS
Number of Hysterectomies	0.001	0.002	-23.3%	(9.1%)
Number of TURPs	0.008	0.008	-0.5%	(3.8%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-7 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Urban (MSA) Areas
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	URBAN HPSA	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.047	0.058	-19.1%	(1.7%)
Any Upper GI Endoscopies	0.025	0.021	17.8%	(3.9%)
Any Other Endoscopies	0.035	0.036	-3.7%	(2.0%) NS
Any Arthroscopies	0.001	0.001	-50.2%	(10.2%)
Total RVUs, Lower GI Endoscopies	13.100	14.600	-10.2%	(2.9%)
Total RVUs, Upper GI Endoscopies	10.500	8.530	22.9%	(4.4%)
Total RVUs, Other Endoscopies	10.900	10.900	0.2%	(4.3%) NS
Total RVUs, Arthroscopies	0.613	1.190	-48.3%	(13.1%)
Any Radiology Services	0.488	0.502	-2.7%	(0.4%)
Any CAT Scans	0.093	0.084	11.5%	(1.7%)
Any MRIs	0.002	0.003	-21.8%	(6.2%)
Any Nuclear Imaging Services	0.066	0.060	10.0%	(1.6%)
Any Non-Cardiac Ultrasounds	0.087	0.079	10.6%	(1.3%)
Total RVUs, Radiology Services	95.900	89.500	7.1%	(1.3%)
Total RVUs, Cat Scans	15.800	14.300	10.1%	(2.7%)
Total RVUs, MRIs	0.982	1.280	-23.2%	(7.0%)
Total RVUs, Nuclear Imaging Services	7.720	6.640	16.3%	(2.2%)
Total RVUs, Non-Cardiac Ultrasounds	9.700	8.440	14.9%	(1.9%)
Any Mammograms	0.035	0.045	-20.9%	(1.8%)
Any Pap Smears	0.023	0.027	-15.3%	(2.4%)
Any Pneumonia Vaccines	0.007	0.011	-37.9%	(3.9%)
Any Influenza Vaccines	0.000	0.000	-32.9%	(14.4%)
Total RVUs, Mammograms	1.720	2.290	-24.9%	(1.6%)
Total RVUs, Pap Smears	0.203	0.243	-16.2%	(2.9%)
Total RVUs, Pneumonia Vaccines	0.598	0.327	82.8%	(77.4%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-34.5%	(15.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-7 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Urban (MSA) Areas
Hospital Outpatient and Inpatient Services and Mortality Rate**

	URBAN HPSA	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.248	0.170	46.1%	(1.1%)
Number of Visits/ER Services	0.965	0.438	120.0%	(3.3%)
Charges, Visits/ER Services	52.800	20.000	164.6%	(6.2%)
Charges, All Services	434.000	305.000	42.3%	(2.5%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.065	0.025	162.5%	(4.3%)
Number of Visits/ER Services	0.313	0.092	238.8%	(9.1%)
Charges, Visits/ER Services	20.300	4.310	370.9%	(18.3%)
Charges, All Services	58.100	26.700	118.0%	(7.7%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.040	0.012	221.3%	(8.2%)
Number of Visits/ER Services	0.204	0.054	281.4%	(11.5%)
Charges, Visits/ER Services	11.900	2.070	472.8%	(33.9%)
Charges, All Services	31.100	13.000	139.3%	(12.0%)
Inpatient Services, Any Hospital				
Discharges, Total	0.372	0.339	9.8%	(0.7%)
Discharges, ACS DRGs	0.082	0.070	17.1%	(2.1%)
Discharges, Low Variation DRGs	0.014	0.017	-14.6%	(4.4%)
Admitted Through ER	0.166	0.131	26.6%	(1.4%)
Outlier, Day or Cost	0.017	0.012	48.6%	(4.8%)
Discharged Dead	0.027	0.022	23.5%	(3.0%)
All Deaths				
Mortality Rate	0.054	0.048	12.9%	(1.3%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-8: Utilization Rates Per Beneficiary, 1986
HPSAs in Rural (non-MSA) Areas
Utilization by Broad Categories of Service

	RURAL HPSA	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	98,200	1,394,000		
Any Services	0.807	0.839	-3.8%	(0.2%)
Total RVUs, All Services	649.000	775.000	-16.3%	(0.7%)
Number of Services, Total	16.500	19.600	-16.1%	(0.6%)
Any Non-Inpatient Services	0.800	0.832	-3.9%	(0.2%)
Total RVUs, Non-Inpatient Services	343.000	436.000	-21.2%	(0.5%)
Number of Non-Inpatient Services	11.500	14.200	-19.1%	(0.4%)
Any Primary Care Services	0.737	0.761	-3.1%	(0.2%)
Total RVUs, Primary Care Services	108.000	123.000	-11.9%	(0.3%)
Number of Primary Care Services	4.320	4.650	-7.0%	(0.4%)
Any Preventive Care Services	0.056	0.075	-25.6%	(1.2%)
Total RVUs, Preventive Care Services	1.720	2.930	-41.2%	(1.9%)
Number of Preventive Care Services	0.078	0.114	-31.7%	(5.0%)
Any Hi-Tech Services	0.213	0.255	-16.5%	(0.5%)
Total RVUs, Hi-Tech Services	86.400	106.000	-18.1%	(1.3%)
Number of Hi-Tech Services	0.431	0.566	-23.7%	(0.7%)
Any OBRA89 Overvalued Procedures	0.328	0.401	-18.3%	(0.5%)
Total RVUs, OBRA89 Overvalued Procedures	141.000	159.000	-11.2%	(0.9%)
Number of OBRA89 Overvalued Procedures	0.875	1.130	-22.6%	(0.9%)
Any Services with General/Family Practitioner	0.482	0.360	34.0%	(0.7%)
Any Services with Internist	0.293	0.402	-27.1%	(0.4%)
Any Services with Surgeon	0.408	0.519	-21.3%	(0.3%)
Any Services with Medical Specialist	0.439	0.487	-10.0%	(0.4%)
Any Services with Group/Miscellaneous	0.343	0.449	-23.6%	(0.3%)
Total RVUs with General/Family Practitioner	112.000	76.900	46.0%	(0.7%)
Total RVUs with Internist	94.800	136.000	-30.5%	(1.1%)
Total RVUs with Surgeon	245.000	292.000	-16.0%	(1.0%)
Total RVUs with Medical Specialist	134.000	189.000	-29.1%	(0.8%)
Total RVUs with Group/Miscellaneous	66.300	86.600	-23.4%	(1.1%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-8 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Rural (non-MSA) Areas
Utilization of Visits and Consultations

	RURAL HPSA	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.737	0.761	-3.1%	(0.2%)
Total RVUs, Primary Care Visits	108.000	123.000	-12.2%	(0.3%)
Number of Primary Care Visits	4.320	4.650	-7.0%	(0.4%)
Any Office Visits	0.676	0.691	-2.3%	(0.2%)
Total RVUs, Office Visits	88.800	100.000	-11.4%	(0.4%)
Number of Office Visits	3.610	3.870	-6.7%	(0.5%)
Any ER/OPD Visits	0.162	0.178	-8.8%	(0.8%)
Total RVUs, ER/OPD Visits	9.210	11.000	-16.7%	(1.3%)
Number of ER/OPD Visits	0.301	0.334	-9.9%	(1.4%)
Any Consultations	0.129	0.182	-29.1%	(0.7%)
Total RVUs, Consultations	20.400	32.200	-36.8%	(2.6%)
Number of Consultations	0.298	0.453	-34.1%	(2.2%)
Any Primary Care Visits, General/Family Practitioner	0.455	0.337	35.1%	(0.7%)
Any Primary Care Visits, Internist	0.215	0.333	-35.5%	(0.5%)
Any Primary Care Visits, Specialist	0.383	0.467	-18.0%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	52.900	37.500	41.3%	(0.8%)
Total RVUs, Primary Care Visits, Internist	21.500	37.400	-42.5%	(0.5%)
Total RVUs, Primary Care Visits, Specialist	33.600	48.200	-30.3%	(0.5%)
Number of Primary Care Visits, General/Family Practitioner	2.180	1.460	49.1%	(0.9%)
Number of Primary Care Visits, Internist	0.836	1.420	-41.0%	(0.6%)
Number of Primary Care Visits, Specialist	1.300	1.770	-26.3%	(0.5%)
Any Consultations with General/Family Practitioner	0.006	0.007	-14.8%	(2.3%)
Any Consultations with Internist	0.043	0.058	-26.5%	(1.1%)
Any Consultations with Specialist	0.104	0.153	-32.3%	(0.7%)
Total RVUs, Consultations with General/Family Practitioner	0.634	0.765	-17.2%	(3.0%)
Total RVUs, Consultations with Internist	5.410	8.190	-33.9%	(1.4%)
Total RVUs, Consultations with Specialist	14.300	23.300	-38.4%	(3.3%)
Number of Consultations with General/Family Practitioner	0.010	0.011	-8.0%	(5.5%) NS
Number of Consultations with Internist	0.074	0.113	-34.4%	(2.2%)
Number of Consultations with Specialist	0.213	0.328	-34.9%	(2.6%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-8 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Rural (non-MSA) Areas
Utilization of Cardiac Procedures and Selected Surgeries

	RURAL HPSA	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.294	0.370	-20.5%	(0.6%)
Any Cardiac Ultrasounds	0.030	0.043	-29.9%	(1.3%)
Any Cardiac Catheterizations	0.013	0.014	-11.0%	(2.7%)
Any PCTAs	0.001	0.001	1.1%	(7.9%) NS
Any CABGs	0.003	0.003	0.6%	(5.7%) NS
Total RVUs, EKGs	18.900	26.400	-28.4%	(0.8%)
Total RVUs, Cardiac Ultrasounds	4.660	7.270	-35.8%	(1.2%)
Total RVUs, Cardiac Catheterizations	9.310	10.400	-10.1%	(3.0%)
Total RVUs, PCTAs	1.840	1.720	6.7%	(6.7%) NS
Total RVUs, CABGs	12.200	12.100	0.5%	(5.8%) NS
Number of EKGs	0.728	0.967	-24.7%	(0.9%)
Number of Cardiac Ultrasounds	0.043	0.067	-35.4%	(1.3%)
Number of Cardiac Catheterizations	0.017	0.021	-17.1%	(3.1%)
Number of PCTAs	0.001	0.001	8.4%	(8.4%) NS
Number of CABGs	0.003	0.003	0.0%	(5.6%) NS
Any Cataract Lens Surgeries	0.025	0.026	-4.0%	(2.0%) NS
Any Joint Prostheses	0.005	0.005	-8.5%	(5.8%) NS
Any Cholecystectomies	0.005	0.005	13.2%	(3.5%)
Any Hysterectomies	0.002	0.002	11.7%	(11.1%) NS
Any TURPs	0.008	0.008	0.8%	(3.9%) NS
Total RVUs, Cataract Lens Surgeries	45.400	46.700	-3.0%	(2.5%) NS
Total RVUs, Joint Prostheses	11.800	12.600	-6.4%	(6.8%) NS
Total RVUs, Cholecystectomies	5.130	4.490	14.1%	(3.2%)
Total RVUs, Hysterectomies	2.040	1.850	10.3%	(10.5%) NS
Total RVUs, TURPs	9.220	9.200	0.2%	(4.1%) NS
Number of Cataract Lens Surgeries	0.029	0.030	-3.3%	(2.5%) NS
Number of Joint Prostheses	0.005	0.006	-7.1%	(6.6%) NS
Number of Cholecystectomies	0.006	0.005	14.6%	(3.7%)
Number of Hysterectomies	0.002	0.002	8.4%	(10.2%) NS
Number of TURPs	0.008	0.008	1.0%	(4.0%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-8 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Rural (non-MSA) Areas
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	RURAL HPSA	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.043	0.059	-26.0%	(0.8%)
Any Upper GI Endoscopies	0.020	0.021	-7.9%	(2.3%)
Any Other Endoscopies	0.031	0.036	-13.4%	(1.6%)
Any Arthroscopies	0.001	0.001	-15.6%	(6.0%)
Total RVUs, Lower GI Endoscopies	10.800	14.800	-27.3%	(1.2%)
Total RVUs, Upper GI Endoscopies	7.620	8.680	-12.1%	(3.4%)
Total RVUs, Other Endoscopies	9.180	11.100	-16.9%	(2.3%)
Total RVUs, Arthroscopies	0.937	1.180	-20.5%	(7.3%)
Any Radiology Services	0.460	0.504	-8.7%	(0.5%)
Any CAT Scans	0.070	0.085	-17.3%	(0.6%)
Any MRIs	0.002	0.003	-52.8%	(4.5%)
Any Nuclear Imaging Services	0.049	0.061	-20.3%	(1.7%)
Any Non-Cardiac Ultrasounds	0.072	0.080	-9.3%	(1.1%)
Total RVUs, Radiology Services	73.600	90.900	-19.1%	(0.8%)
Total RVUs, Cat Scans	11.800	14.600	-19.5%	(1.1%)
Total RVUs, MRIs	0.534	1.320	-59.5%	(4.6%)
Total RVUs, Nuclear Imaging Services	4.760	6.820	-30.3%	(1.6%)
Total RVUs, Non-Cardiac Ultrasounds	6.870	8.610	-20.1%	(1.4%)
Any Mammograms	0.028	0.045	-37.2%	(1.6%)
Any Pap Smears	0.020	0.027	-26.0%	(1.8%)
Any Pneumonia Vaccines	0.012	0.011	12.4%	(3.7%)
Any Influenza Vaccines	0.000	0.000	-12.2%	(20.1%) NS
Total RVUs, Mammograms	1.300	2.340	-44.5%	(1.7%)
Total RVUs, Pap Smears	0.179	0.245	-26.9%	(2.0%)
Total RVUs, Pneumonia Vaccines	0.245	0.345	-29.1%	(15.7%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-18.6%	(18.9%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-8 (continued): Utilization Rates Per Beneficiary, 1986
HPSAs in Rural (non-MSA) Areas
Hospital Outpatient and Inpatient Services and Mortality Rate**

	RURAL HPSA	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.181	0.173	4.5%	(0.4%)
Number of Visits/ER Services	0.433	0.462	-6.3%	(0.8%)
Charges, Visits/ER Services	14.800	21.800	-32.0%	(0.9%)
Charges, All Services	255.000	315.000	-18.8%	(1.2%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.014	0.028	-50.7%	(1.4%)
Number of Visits/ER Services	0.040	0.106	-62.1%	(2.3%)
Charges, Visits/ER Services	1.210	5.240	-76.8%	(1.4%)
Charges, All Services	16.300	28.800	-43.5%	(4.2%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.008	0.014	-41.2%	(3.0%)
Number of Visits/ER Services	0.028	0.062	-55.3%	(3.6%)
Charges, Visits/ER Services	0.773	2.600	-70.3%	(2.5%)
Charges, All Services	9.640	14.100	-31.4%	(7.6%)
Inpatient Services, Any Hospital				
Discharges, Total	0.386	0.337	14.5%	(1.2%)
Discharges, ACS DRGs	0.091	0.069	31.6%	(1.8%)
Discharges, Low Variation DRGs	0.019	0.016	17.6%	(3.5%)
Admitted Through ER	0.122	0.134	-8.5%	(1.4%)
Outlier, Day or Cost	0.010	0.012	-17.2%	(1.9%)
Discharged Dead	0.022	0.022	2.7%	(2.5%) NS
All Deaths				
Mortality Rate	0.048	0.048	0.3%	(2.1%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-9: Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>20% of Population in Poverty)
Utilization by Broad Categories of Service

	>20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	245,000	1,247,000		
Any Services	0.797	0.844	-5.5%	(0.1%)
Total RVUs, All Services	732.000	773.000	-5.4%	(0.3%)
Number of Services, Total	18.600	19.600	-5.2%	(0.3%)
Any Non-Inpatient Services	0.789	0.838	-5.9%	(0.1%)
Total RVUs, Non-Inpatient Services	389.000	438.000	-11.2%	(0.3%)
Number of Non-Inpatient Services	12.700	14.200	-10.6%	(0.3%)
Any Primary Care Services	0.723	0.766	-5.6%	(0.1%)
Total RVUs, Primary Care Services	117.000	122.000	-4.3%	(0.2%)
Number of Primary Care Services	4.540	4.640	-2.2%	(0.2%)
Any Preventive Care Services	0.053	0.078	-31.7%	(0.7%)
Total RVUs, Preventive Care Services	1.750	3.060	-42.9%	(1.8%)
Number of Preventive Care Services	0.076	0.118	-35.6%	(4.1%)
Any Hi-Tech Services	0.233	0.256	-9.0%	(0.3%)
Total RVUs, Hi-Tech Services	97.500	106.000	-7.6%	(0.7%)
Number of Hi-Tech Services	0.526	0.563	-6.5%	(0.8%)
Any OBRA89 Overvalued Procedures	0.367	0.402	-8.6%	(0.2%)
Total RVUs, OBRA89 Overvalued Procedures	147.000	159.000	-7.4%	(0.5%)
Number of OBRA89 Overvalued Procedures	1.060	1.120	-6.0%	(0.5%)
Any Services with General/Family Practitioner	0.414	0.359	15.4%	(0.3%)
Any Services with Internist	0.354	0.403	-12.1%	(0.2%)
Any Services with Surgeon	0.440	0.525	-16.1%	(0.2%)
Any Services with Medical Specialist	0.451	0.491	-8.2%	(0.2%)
Any Services with Group/Miscellaneous	0.364	0.457	-20.5%	(0.3%)
Total RVUs with General/Family Practitioner	97.600	75.600	29.0%	(0.9%)
Total RVUs with Internist	126.000	135.000	-7.1%	(0.8%)
Total RVUs with Surgeon	271.000	292.000	-7.3%	(0.3%)
Total RVUs with Medical Specialist	175.000	187.000	-6.6%	(0.6%)
Total RVUs with Group/Miscellaneous	67.700	88.700	-23.7%	(0.6%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-9 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>20% of Population in Poverty)
Utilization of Visits and Consultations

	>20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.723	0.766	-5.6%	(0.1%)
Total RVUs, Primary Care Visits	118.000	123.000	-4.3%	(0.2%)
Number of Primary Care Visits	4.540	4.640	-2.2%	(0.2%)
Any Office Visits	0.646	0.699	-7.7%	(0.2%)
Total RVUs, Office Visits	94.100	100.000	-6.3%	(0.1%)
Number of Office Visits	3.720	3.880	-4.2%	(0.1%)
Any ER/OPD Visits	0.189	0.174	8.5%	(0.5%)
Total RVUs, ER/OPD Visits	13.000	10.500	23.3%	(1.2%)
Number of ER/OPD Visits	0.413	0.316	30.9%	(1.3%)
Any Consultations	0.160	0.182	-11.9%	(0.4%)
Total RVUs, Consultations	28.900	31.900	-9.5%	(1.0%)
Number of Consultations	0.422	0.446	-5.4%	(1.4%)
Any Primary Care Visits, General/Family Practitioner	0.391	0.336	16.4%	(0.3%)
Any Primary Care Visits, Internist	0.272	0.335	-18.9%	(0.2%)
Any Primary Care Visits, Specialist	0.395	0.474	-16.7%	(0.2%)
Total RVUs, Primary Care Visits, General/Family Practitioner	46.400	36.900	25.8%	(0.6%)
Total RVUs, Primary Care Visits, Internist	31.300	37.300	-16.0%	(0.2%)
Total RVUs, Primary Care Visits, Specialist	39.800	48.700	-18.2%	(0.3%)
Number of Primary Care Visits, General/Family Practitioner	1.860	1.440	29.3%	(0.5%)
Number of Primary Care Visits, Internist	1.200	1.410	-15.1%	(0.3%)
Number of Primary Care Visits, Specialist	1.480	1.790	-17.4%	(0.3%)
Any Consultations with General/Family Practitioner	0.007	0.007	-6.3%	(2.8%)
Any Consultations with Internist	0.054	0.058	-5.9%	(1.1%)
Any Consultations with Specialist	0.133	0.153	-13.2%	(0.5%)
Total RVUs, Consultations with General/Family Practitioner	0.737	0.761	-3.1%	(3.3%) NS
Total RVUs, Consultations with Internist	7.580	8.090	-6.3%	(1.5%)
Total RVUs, Consultations with Specialist	20.600	23.100	-10.9%	(1.3%)
Number of Consultations with General/Family Practitioner	0.011	0.011	-0.1%	(3.6%) NS
Number of Consultations with Internist	0.107	0.112	-4.4%	(1.6%)
Number of Consultations with Specialist	0.304	0.323	-5.9%	(1.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-9 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>20% of Population in Poverty)
Utilization of Cardiac Procedures and Selected Surgeries

	> 20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.336	0.370	-9.4%	(0.2%)
Any Cardiac Ultrasounds	0.042	0.043	-0.4%	(0.9%) NS
Any Cardiac Catheterizations	0.013	0.015	-10.2%	(1.3%)
Any PCTAs	0.001	0.001	-19.5%	(6.2%)
Any CABGs	0.003	0.003	-18.4%	(3.9%)
Total RVUs, EKGs	23.400	26.300	-11.2%	(0.4%)
Total RVUs, Cardiac Ultrasounds	6.860	7.130	-3.8%	(1.2%)
Total RVUs, Cardiac Catheterizations	9.260	10.500	-11.6%	(2.2%)
Total RVUs, PCTAs	1.410	1.790	-21.3%	(5.6%)
Total RVUs, CABGs	10.200	12.500	-18.3%	(3.9%)
Number of EKGs	0.898	0.961	-6.6%	(0.6%)
Number of Cardiac Ultrasounds	0.064	0.066	-3.6%	(1.4%)
Number of Cardiac Catheterizations	0.018	0.021	-14.6%	(1.7%)
Number of PCTAs	0.001	0.001	-20.9%	(5.8%)
Number of CABGs	0.003	0.003	-18.8%	(3.8%)
Any Cataract Lens Surgeries	0.026	0.026	-2.3%	(1.1%)
Any Joint Prostheses	0.004	0.005	-23.3%	(5.1%)
Any Cholecystectomies	0.005	0.005	12.0%	(3.3%)
Any Hysterectomies	0.002	0.002	-11.2%	(6.0%) NS
Any TURPs	0.008	0.008	-3.2%	(1.5%)
Total RVUs, Cataract Lens Surgeries	46.900	46.600	0.7%	(1.2%) NS
Total RVUs, Joint Prostheses	10.200	13.000	-21.2%	(5.1%)
Total RVUs, Cholecystectomies	5.020	4.450	12.9%	(3.3%)
Total RVUs, Hysterectomies	1.660	1.910	-13.0%	(6.3%)
Total RVUs, TURPs	8.960	9.260	-3.2%	(1.4%)
Number of Cataract Lens Surgeries	0.030	0.030	0.1%	(1.2%) NS
Number of Joint Prostheses	0.005	0.006	-22.6%	(4.8%)
Number of Cholecystectomies	0.006	0.005	12.6%	(3.3%)
Number of Hysterectomies	0.002	0.002	-12.2%	(6.1%) NS
Number of TURPs	0.008	0.008	-2.5%	(1.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-9 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>20% of Population in Poverty)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	>20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.044	0.060	-26.2%	(0.7%)
Any Upper GI Endoscopies	0.023	0.021	10.9%	(1.7%)
Any Other Endoscopies	0.033	0.036	-8.0%	(1.2%)
Any Arthroscopies	0.001	0.001	-36.3%	(5.8%)
Total RVUs, Lower GI Endoscopies	11.900	15.000	-20.5%	(1.1%)
Total RVUs, Upper GI Endoscopies	9.210	8.490	8.6%	(2.0%)
Total RVUs, Other Endoscopies	10.300	11.000	-6.8%	(1.4%)
Total RVUs, Arthroscopies	0.822	1.230	-33.1%	(9.1%)
Any Radiology Services	0.476	0.506	-5.9%	(0.2%)
Any CAT Scans	0.081	0.085	-3.8%	(0.7%)
Any MRIs	0.002	0.003	-36.9%	(3.2%)
Any Nuclear Imaging Services	0.057	0.061	-6.4%	(0.7%)
Any Non-Cardiac Ultrasounds	0.081	0.079	2.9%	(0.4%)
Total RVUs, Radiology Services	85.300	90.600	-5.8%	(0.6%)
Total RVUs, Cat Scans	13.800	14.500	-4.8%	(0.8%)
Total RVUs, MRIs	0.774	1.370	-43.5%	(4.0%)
Total RVUs, Nuclear Imaging Services	6.090	6.800	-10.4%	(1.2%)
Total RVUs, Non-Cardiac Ultrasounds	8.600	8.470	1.6%	(1.1%) NS
Any Mammograms	0.027	0.048	-42.2%	(0.8%)
Any Pap Smears	0.021	0.028	-24.1%	(0.7%)
Any Pneumonia Vaccines	0.009	0.011	-18.8%	(2.7%)
Any Influenza Vaccines	0.000	0.000	-16.6%	(12.9%) NS
Total RVUs, Mammograms	1.330	2.450	-45.8%	(1.0%)
Total RVUs, Pap Smears	0.189	0.251	-24.6%	(0.6%)
Total RVUs, Pneumonia Vaccines	0.229	0.360	-36.3%	(18.0%)
Total RVUs, Influenza Vaccines	0.002	0.003	-20.1%	(11.5%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-9 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>20% of Population in Poverty)
Hospital Outpatient and Inpatient Services and Mortality Rate**

	> 20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.210	0.166	26.5%	(0.5%)
Number of Visits/ER Services	0.702	0.411	70.7%	(1.4%)
Charges, Visits/ER Services	33.000	19.000	74.4%	(1.9%)
Charges, All Services	334.000	306.000	9.4%	(0.9%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.041	0.024	76.1%	(2.2%)
Number of Visits/ER Services	0.196	0.082	138.3%	(4.0%)
Charges, Visits/ER Services	10.100	3.930	155.7%	(3.8%)
Charges, All Services	36.800	26.100	41.1%	(2.7%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.026	0.011	136.2%	(3.7%)
Number of Visits/ER Services	0.124	0.047	164.8%	(6.6%)
Charges, Visits/ER Services	4.900	1.980	147.6%	(4.8%)
Charges, All Services	21.300	12.200	74.8%	(6.0%)
Inpatient Services, Any Hospital				
Discharges, Total	0.385	0.331	16.2%	(0.7%)
Discharges, ACS DRGs	0.087	0.068	28.3%	(2.2%)
Discharges, Low Variation DRGs	0.017	0.017	1.1%	(1.7%) NS
Admitted Through ER	0.146	0.130	12.3%	(1.1%)
Outlier, Day or Cost	0.014	0.011	26.3%	(2.1%)
Discharged Dead	0.025	0.021	17.6%	(1.6%)
All Deaths				
Mortality Rate	0.051	0.048	7.3%	(0.7%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-10: Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>20% of Population in Poverty)
Utilization by Broad Categories of Service

	URBAN >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	128,000	1,364,000		
Any Services	0.791	0.841	-5.9%	(0.2%)
Total RVUs, All Services	796.000	764.000	4.3%	(0.5%)
Number of Services, Total	20.200	19.300	4.7%	(0.4%)
Any Non-Inpatient Services	0.782	0.834	-6.2%	(0.2%)
Total RVUs, Non-Inpatient Services	424.000	430.000	-1.3%	(0.4%)
Number of Non-Inpatient Services	13.800	14.000	-1.5%	(0.4%)
Any Primary Care Services	0.710	0.763	-7.0%	(0.2%)
Total RVUs, Primary Care Services	123.000	121.000	1.7%	(0.3%)
Number of Primary Care Services	4.640	4.630	0.4%	(0.3%) NS
Any Preventive Care Services	0.055	0.076	-27.6%	(1.3%)
Total RVUs, Preventive Care Services	1.940	2.940	-33.8%	(2.6%)
Number of Preventive Care Services	0.080	0.114	-29.8%	(6.2%)
Any Hi-Tech Services	0.251	0.252	-0.2%	(0.4%) NS
Total RVUs, Hi-Tech Services	106.000	104.000	2.1%	(0.7%)
Number of Hi-Tech Services	0.604	0.552	9.3%	(0.9%)
Any OBRA89 Overvalued Procedures	0.396	0.396	-0.1%	(0.2%) NS
Total RVUs, OBRA89 Overvalued Procedures	151.000	158.000	-4.3%	(0.9%)
Number of OBRA89 Overvalued Procedures	1.200	1.110	8.1%	(0.6%)
Any Services with General/Family Practitioner	0.333	0.371	-10.1%	(0.3%)
Any Services with Internist	0.395	0.395	-0.0%	(0.3%) NS
Any Services with Surgeon	0.465	0.516	-9.8%	(0.3%)
Any Services with Medical Specialist	0.461	0.486	-5.3%	(0.2%)
Any Services with Group/Miscellaneous	0.407	0.445	-8.6%	(0.4%)
Total RVUs with General/Family Practitioner	74.500	79.700	-6.5%	(1.1%)
Total RVUs with Internist	150.000	132.000	13.2%	(0.8%)
Total RVUs with Surgeon	284.000	289.000	-1.6%	(0.6%)
Total RVUs with Medical Specialist	211.000	183.000	15.6%	(1.1%)
Total RVUs with Group/Miscellaneous	83.500	85.300	-2.2%	(1.4%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-10 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>20% of Population in Poverty)
Utilization of Visits and Consultations**

	URBAN >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.710	0.763	-7.0%	(0.2%)
Total RVUs, Primary Care Visits	124.000	122.000	1.9%	(0.4%)
Number of Primary Care Visits	4.640	4.630	0.4%	(0.3%) NS
Any Office Visits	0.615	0.697	-11.8%	(0.3%)
Total RVUs, Office Visits	96.100	99.700	-3.6%	(0.3%)
Number of Office Visits	3.700	3.870	-4.4%	(0.3%)
Any ER/OPD Visits	0.212	0.173	22.5%	(0.4%)
Total RVUs, ER/OPD Visits	16.400	10.400	57.8%	(1.9%)
Number of ER/OPD Visits	0.515	0.314	63.7%	(2.0%)
Any Consultations	0.187	0.178	5.3%	(0.6%)
Total RVUs, Consultations	36.700	30.900	18.7%	(1.4%)
Number of Consultations	0.531	0.434	22.3%	(1.7%)
Any Primary Care Visits, General/Family Practitioner	0.314	0.348	-9.6%	(0.3%)
Any Primary Care Visits, Internist	0.316	0.325	-3.0%	(0.3%)
Any Primary Care Visits, Specialist	0.423	0.465	-9.0%	(0.3%)
Total RVUs, Primary Care Visits, General/Family Practitioner	37.800	38.500	-2.0%	(0.8%)
Total RVUs, Primary Care Visits, Internist	39.000	36.100	8.2%	(0.6%)
Total RVUs, Primary Care Visits, Specialist	47.400	47.200	0.4%	(0.4%) NS
Number of Primary Care Visits, General/Family Practitioner	1.440	1.520	-4.8%	(0.7%)
Number of Primary Care Visits, Internist	1.480	1.370	8.2%	(0.6%)
Number of Primary Care Visits, Specialist	1.720	1.740	-1.2%	(0.4%)
Any Consultations with General/Family Practitioner	0.007	0.007	-2.4%	(3.6%) NS
Any Consultations with Internist	0.063	0.056	12.4%	(1.2%)
Any Consultations with Specialist	0.159	0.149	6.8%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	0.803	0.752	6.7%	(5.4%) NS
Total RVUs, Consultations with Internist	9.470	7.870	20.3%	(2.3%)
Total RVUs, Consultations with Specialist	26.500	22.300	18.6%	(1.6%)
Number of Consultations with General/Family Practitioner	0.012	0.011	3.7%	(5.3%) NS
Number of Consultations with Internist	0.134	0.109	23.2%	(2.5%)
Number of Consultations with Specialist	0.385	0.314	22.7%	(1.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-10 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>20% of Population in Poverty)
Utilization of Cardiac Procedures and Selected Surgeries**

	URBAN >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.365	0.365	0.2%	(0.2%) NS
Any Cardiac Ultrasounds	0.053	0.042	26.8%	(0.9%)
Any Cardiac Catheterizations	0.013	0.014	-6.4%	(1.9%)
Any PCTAs	0.001	0.001	-26.5%	(8.9%)
Any CABGs	0.002	0.003	-26.9%	(3.8%)
Total RVUs, EKGs	26.700	25.800	3.6%	(0.5%)
Total RVUs, Cardiac Ultrasounds	8.700	6.940	25.4%	(2.0%)
Total RVUs, Cardiac Catheterizations	9.290	10.400	-10.5%	(2.3%)
Total RVUs, PCTAs	1.290	1.770	-27.1%	(9.3%)
Total RVUs, CABGs	8.970	12.400	-27.5%	(3.7%)
Number of EKGs	1.030	0.943	9.4%	(0.7%)
Number of Cardiac Ultrasounds	0.082	0.064	27.6%	(1.9%)
Number of Cardiac Catheterizations	0.019	0.021	-7.8%	(2.6%)
Number of PCTAs	0.001	0.001	-26.7%	(9.7%)
Number of CABGs	0.002	0.003	-27.5%	(3.6%)
Any Cataract Lens Surgeries	0.026	0.026	-1.7%	(1.5%) NS
Any Joint Prostheses	0.004	0.005	-28.3%	(5.7%)
Any Cholecystectomies	0.005	0.005	-7.4%	(3.6%)
Any Hysterectomies	0.001	0.002	-23.9%	(8.0%)
Any TURPs	0.008	0.008	-4.1%	(1.7%)
Total RVUs, Cataract Lens Surgeries	46.700	46.600	0.2%	(1.9%) NS
Total RVUs, Joint Prostheses	9.260	12.800	-27.7%	(6.2%)
Total RVUs, Cholecystectomies	4.220	4.570	-7.6%	(4.1%) NS
Total RVUs, Hysterectomies	1.420	1.910	-25.4%	(8.8%)
Total RVUs, TURPs	8.870	9.240	-4.0%	(1.7%)
Number of Cataract Lens Surgeries	0.030	0.030	-0.0%	(1.9%) NS
Number of Joint Prostheses	0.004	0.006	-28.4%	(5.6%)
Number of Cholecystectomies	0.005	0.005	-7.3%	(3.9%) NS
Number of Hysterectomies	0.001	0.002	-25.2%	(8.3%)
Number of TURPs	0.008	0.008	-3.6%	(1.5%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-10 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>20% of Population in Poverty)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	URBAN >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.047	0.059	-19.9%	(0.7%)
Any Upper GI Endoscopies	0.026	0.021	21.9%	(2.1%)
Any Other Endoscopies	0.035	0.036	-1.7%	(2.1%) NS
Any Arthroscopies	0.001	0.001	-39.9%	(9.2%)
Total RVUs, Lower GI Endoscopies	13.000	14.600	-11.2%	(1.5%)
Total RVUs, Upper GI Endoscopies	10.400	8.440	22.9%	(2.5%)
Total RVUs, Other Endoscopies	11.200	10.900	2.8%	(2.6%) NS
Total RVUs, Arthroscopies	0.814	1.200	-31.9%	(14.5%)
Any Radiology Services	0.483	0.503	-3.8%	(0.2%)
Any CAT Scans	0.091	0.083	8.9%	(0.8%)
Any MRIs	0.003	0.003	-15.6%	(5.3%)
Any Nuclear Imaging Services	0.064	0.060	6.0%	(1.1%)
Any Non-Cardiac Ultrasounds	0.086	0.079	8.9%	(0.8%)
Total RVUs, Radiology Services	94.000	89.300	5.2%	(0.8%)
Total RVUs, Cat Scans	15.700	14.300	9.7%	(1.2%)
Total RVUs, MRIs	0.986	1.300	-23.9%	(5.8%)
Total RVUs, Nuclear Imaging Services	7.300	6.620	10.2%	(1.4%)
Total RVUs, Non-Cardiac Ultrasounds	9.630	8.380	14.8%	(1.2%)
Any Mammograms	0.030	0.046	-33.1%	(1.5%)
Any Pap Smears	0.022	0.027	-19.2%	(1.7%)
Any Pneumonia Vaccines	0.007	0.011	-35.5%	(2.7%)
Any Influenza Vaccines	0.000	0.000	-19.0%	(23.4%) NS
Total RVUs, Mammograms	1.510	2.340	-35.3%	(1.7%)
Total RVUs, Pap Smears	0.198	0.245	-19.1%	(1.3%)
Total RVUs, Pneumonia Vaccines	0.228	0.349	-34.5%	(23.2%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-18.7%	(21.6%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-10 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>20% of Population in Poverty)
Hospital Outpatient and Inpatient Services and Mortality Rate**

	URBAN >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.241	0.167	44.2%	(1.0%)
Number of Visits/ER Services	0.959	0.412	133.0%	(2.3%)
Charges, Visits/ER Services	49.700	18.600	167.7%	(3.6%)
Charges, All Services	409.000	300.000	36.1%	(2.0%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.068	0.023	199.8%	(4.7%)
Number of Visits/ER Services	0.337	0.078	330.1%	(9.1%)
Charges, Visits/ER Services	18.100	3.690	390.9%	(7.7%)
Charges, All Services	57.600	25.000	130.0%	(4.5%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.043	0.011	294.9%	(7.3%)
Number of Visits/ER Services	0.212	0.045	373.4%	(12.6%)
Charges, Visits/ER Services	8.750	1.860	371.1%	(10.9%)
Charges, All Services	32.700	11.900	175.2%	(8.7%)
Inpatient Services, Any Hospital				
Discharges, Total	0.366	0.338	8.6%	(0.5%)
Discharges, ACS DRGs	0.079	0.070	12.2%	(2.1%)
Discharges, Low Variation DRGs	0.014	0.017	-16.1%	(2.1%)
Admitted Through ER	0.163	0.130	25.1%	(1.2%)
Outlier, Day or Cost	0.018	0.011	60.9%	(4.7%)
Discharged Dead	0.026	0.021	21.0%	(2.9%)
All Deaths				
Mortality Rate	0.053	0.048	10.9%	(1.5%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-11: Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>20% of Population in Poverty)
Utilization by Broad Categories of Service

	RURAL >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	117,000	1,375,000		
Any Services	0.804	0.839	-4.3%	(0.2%)
Total RVUs, All Services	662.000	776.000	-14.7%	(0.5%)
Number of Services, Total	16.800	19.700	-14.7%	(0.5%)
Any Non-Inpatient Services	0.796	0.833	-4.5%	(0.2%)
Total RVUs, Non-Inpatient Services	350.000	437.000	-19.9%	(0.4%)
Number of Non-Inpatient Services	11.600	14.200	-18.6%	(0.4%)
Any Primary Care Services	0.737	0.761	-3.1%	(0.2%)
Total RVUs, Primary Care Services	110.000	123.000	-9.9%	(0.2%)
Number of Primary Care Services	4.430	4.640	-4.6%	(0.2%)
Any Preventive Care Services	0.051	0.076	-32.3%	(0.9%)
Total RVUs, Preventive Care Services	1.540	2.960	-48.1%	(1.8%)
Number of Preventive Care Services	0.072	0.115	-37.2%	(4.8%)
Any Hi-Tech Services	0.213	0.255	-16.6%	(0.3%)
Total RVUs, Hi-Tech Services	88.200	106.000	-16.5%	(0.8%)
Number of Hi-Tech Services	0.443	0.566	-21.8%	(0.8%)
Any OBRA89 Overvalued Procedures	0.337	0.402	-16.1%	(0.4%)
Total RVUs, OBRA89 Overvalued Procedures	144.000	159.000	-9.4%	(0.4%)
Number of OBRA89 Overvalued Procedures	0.909	1.130	-19.6%	(0.4%)
Any Services with General/Family Practitioner	0.500	0.357	40.4%	(0.4%)
Any Services with Internist	0.310	0.402	-22.9%	(0.4%)
Any Services with Surgeon	0.414	0.520	-20.4%	(0.3%)
Any Services with Medical Specialist	0.440	0.488	-9.9%	(0.3%)
Any Services with Group/Miscellaneous	0.317	0.453	-30.0%	(0.5%)
Total RVUs with General/Family Practitioner	123.000	75.500	62.3%	(1.7%)
Total RVUs with Internist	99.800	137.000	-26.9%	(0.8%)
Total RVUs with Surgeon	256.000	291.000	-12.2%	(0.6%)
Total RVUs with Medical Specialist	136.000	189.000	-28.4%	(0.6%)
Total RVUs with Group/Miscellaneous	50.500	88.200	-42.8%	(0.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-11 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>20% of Population in Poverty)
Utilization of Visits and Consultations

	RURAL >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.737	0.761	-3.1%	(0.2%)
Total RVUs, Primary Care Visits	111.000	123.000	-10.2%	(0.2%)
Number of Primary Care Visits	4.430	4.640	-4.6%	(0.2%)
Any Office Visits	0.678	0.691	-1.9%	(0.3%)
Total RVUs, Office Visits	91.900	100.000	-8.1%	(0.2%)
Number of Office Visits	3.740	3.860	-3.1%	(0.2%)
Any ER/OPD Visits	0.164	0.178	-7.9%	(0.8%)
Total RVUs, ER/OPD Visits	9.240	11.100	-16.5%	(1.0%)
Number of ER/OPD Visits	0.303	0.334	-9.5%	(1.1%)
Any Consultations	0.132	0.183	-27.9%	(0.6%)
Total RVUs, Consultations	20.500	32.400	-36.8%	(1.9%)
Number of Consultations	0.306	0.454	-32.7%	(1.9%)
Any Primary Care Visits, General/Family Practitioner	0.473	0.334	41.7%	(0.3%)
Any Primary Care Visits, Internist	0.224	0.333	-32.8%	(0.4%)
Any Primary Care Visits, Specialist	0.365	0.470	-22.3%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	55.900	37.000	51.1%	(0.9%)
Total RVUs, Primary Care Visits, Internist	23.000	37.400	-38.5%	(0.6%)
Total RVUs, Primary Care Visits, Specialist	31.600	48.600	-34.9%	(0.3%)
Number of Primary Care Visits, General/Family Practitioner	2.320	1.440	60.9%	(0.8%)
Number of Primary Care Visits, Internist	0.896	1.420	-36.9%	(0.5%)
Number of Primary Care Visits, Specialist	1.220	1.780	-31.7%	(0.4%)
Any Consultations with General/Family Practitioner	0.007	0.007	-9.5%	(3.2%)
Any Consultations with Internist	0.044	0.058	-23.8%	(1.3%)
Any Consultations with Specialist	0.105	0.154	-31.8%	(0.6%)
Total RVUs, Consultations with General/Family Practitioner	0.668	0.764	-12.6%	(4.3%)
Total RVUs, Consultations with Internist	5.570	8.210	-32.2%	(1.5%)
Total RVUs, Consultations with Specialist	14.200	23.400	-39.2%	(2.4%)
Number of Consultations with General/Family Practitioner	0.011	0.011	-3.7%	(5.6%) NS
Number of Consultations with Internist	0.078	0.114	-31.6%	(1.8%)
Number of Consultations with Specialist	0.217	0.329	-34.0%	(2.4%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-11 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>20% of Population in Poverty)
Utilization of Cardiac Procedures and Selected Surgeries

	RURAL >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.303	0.370	-18.0%	(0.5%)
Any Cardiac Ultrasounds	0.031	0.043	-28.0%	(1.4%)
Any Cardiac Catheterizations	0.013	0.014	-12.5%	(2.0%)
Any PCTAs	0.001	0.001	-8.4%	(7.8%) NS
Any CABGs	0.003	0.003	-6.7%	(4.4%) NS
Total RVUs, EKGs	19.900	26.400	-24.7%	(0.5%)
Total RVUs, Cardiac Ultrasounds	4.900	7.280	-32.7%	(1.5%)
Total RVUs, Cardiac Catheterizations	9.250	10.400	-10.8%	(2.9%)
Total RVUs, PCTAs	1.550	1.740	-11.3%	(6.5%) NS
Total RVUs, CABGs	11.400	12.200	-5.9%	(4.3%) NS
Number of EKGs	0.755	0.968	-22.0%	(0.6%)
Number of Cardiac Ultrasounds	0.044	0.067	-34.4%	(1.6%)
Number of Cardiac Catheterizations	0.017	0.021	-19.2%	(2.5%)
Number of PCTAs	0.001	0.001	-11.0%	(7.4%) NS
Number of CABGs	0.003	0.003	-6.9%	(4.3%) NS
Any Cataract Lens Surgeries	0.026	0.026	-2.4%	(1.6%) NS
Any Joint Prostheses	0.004	0.005	-14.4%	(6.2%)
Any Cholecystectomies	0.006	0.005	31.3%	(5.2%)
Any Hysterectomies	0.002	0.002	5.4%	(6.7%) NS
Any TURPs	0.008	0.008	-1.7%	(2.9%) NS
Total RVUs, Cataract Lens Surgeries	47.100	46.600	1.1%	(1.7%) NS
Total RVUs, Joint Prostheses	11.200	12.600	-10.9%	(6.6%) NS
Total RVUs, Cholecystectomies	5.890	4.420	33.3%	(5.2%)
Total RVUs, Hysterectomies	1.930	1.860	3.6%	(6.2%) NS
Total RVUs, TURPs	9.060	9.220	-1.7%	(2.7%) NS
Number of Cataract Lens Surgeries	0.030	0.030	0.3%	(1.7%) NS
Number of Joint Prostheses	0.005	0.006	-12.8%	(6.4%)
Number of Cholecystectomies	0.006	0.005	32.3%	(5.1%)
Number of Hysterectomies	0.002	0.002	5.0%	(6.1%) NS
Number of TURPs	0.008	0.008	-0.9%	(2.6%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-11 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>20% of Population in Poverty)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	RURAL >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.042	0.059	-29.1%	(1.0%)
Any Upper GI Endoscopies	0.021	0.021	-2.8%	(1.7%) NS
Any Other Endoscopies	0.031	0.036	-13.2%	(0.8%)
Any Arthroscopies	0.001	0.001	-28.1%	(5.3%)
Total RVUs, Lower GI Endoscopies	10.800	14.800	-27.2%	(1.2%)
Total RVUs, Upper GI Endoscopies	7.990	8.660	-7.8%	(1.8%)
Total RVUs, Other Endoscopies	9.340	11.100	-15.6%	(1.1%)
Total RVUs, Arthroscopies	0.832	1.190	-30.2%	(4.2%)
Any Radiology Services	0.468	0.504	-7.1%	(0.2%)
Any CAT Scans	0.071	0.085	-16.3%	(1.0%)
Any MRIs	0.001	0.003	-54.7%	(3.4%)
Any Nuclear Imaging Services	0.050	0.061	-18.2%	(1.4%)
Any Non-Cardiac Ultrasounds	0.076	0.080	-3.9%	(0.9%)
Total RVUs, Radiology Services	76.200	90.900	-16.2%	(0.6%)
Total RVUs, Cat Scans	11.900	14.600	-18.9%	(1.0%)
Total RVUs, MRIs	0.549	1.330	-58.7%	(4.1%)
Total RVUs, Nuclear Imaging Services	4.780	6.850	-30.2%	(1.4%)
Total RVUs, Non-Cardiac Ultrasounds	7.510	8.580	-12.5%	(2.0%)
Any Mammograms	0.024	0.046	-47.6%	(0.9%)
Any Pap Smears	0.020	0.027	-26.1%	(2.0%)
Any Pneumonia Vaccines	0.011	0.011	2.4%	(3.3%) NS
Any Influenza Vaccines	0.000	0.000	-13.9%	(12.7%) NS
Total RVUs, Mammograms	1.120	2.360	-52.6%	(0.9%)
Total RVUs, Pap Smears	0.179	0.246	-27.4%	(2.2%)
Total RVUs, Pneumonia Vaccines	0.235	0.348	-32.3%	(16.8%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-20.7%	(10.8%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-11 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>20% of Population in Poverty)
Hospital Outpatient and Inpatient Services and Mortality Rate

	RURAL >20% POVERTY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.176	0.173	2.0%	(0.7%)
Number of Visits/ER Services	0.420	0.464	-9.3%	(1.6%)
Charges, Visits/ER Services	14.800	21.900	-32.4%	(1.3%)
Charges, All Services	251.000	316.000	-20.7%	(1.0%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.013	0.028	-53.8%	(1.0%)
Number of Visits/ER Services	0.041	0.107	-61.5%	(1.5%)
Charges, Visits/ER Services	1.270	5.300	-76.1%	(1.6%)
Charges, All Services	14.200	29.200	-51.3%	(2.1%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.008	0.014	-42.4%	(1.9%)
Number of Visits/ER Services	0.026	0.063	-57.9%	(2.2%)
Charges, Visits/ER Services	0.666	2.640	-74.8%	(1.7%)
Charges, All Services	8.880	14.200	-37.5%	(4.9%)
Inpatient Services, Any Hospital				
Discharges, Total	0.405	0.335	20.9%	(0.8%)
Discharges, ACS DRGs	0.096	0.069	39.3%	(2.7%)
Discharges, Low Variation DRGs	0.019	0.016	19.3%	(2.3%)
Admitted Through ER	0.129	0.133	-3.4%	(0.9%)
Outlier, Day or Cost	0.010	0.012	-13.6%	(2.6%)
Discharged Dead	0.024	0.022	10.8%	(2.6%)
All Deaths				
Mortality Rate	0.049	0.048	2.2%	(1.4%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-12: Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>30% of Population in Poverty)
Utilization by Broad Categories of Service

	> 30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	83,400	1,408,000		
Any Services	0.783	0.840	-6.8%	(0.3%)
Total RVUs, All Services	721.000	769.000	-6.2%	(0.7%)
Number of Services, Total	18.600	19.500	-4.3%	(0.7%)
Any Non-Inpatient Services	0.774	0.833	-7.2%	(0.2%)
Total RVUs, Non-Inpatient Services	378.000	433.000	-12.7%	(0.5%)
Number of Non-Inpatient Services	12.600	14.100	-10.3%	(0.6%)
Any Primary Care Services	0.709	0.762	-7.0%	(0.3%)
Total RVUs, Primary Care Services	116.000	122.000	-4.7%	(0.6%)
Number of Primary Care Services	4.530	4.630	-2.3%	(0.6%)
Any Preventive Care Services	0.047	0.075	-37.4%	(1.8%)
Total RVUs, Preventive Care Services	1.640	2.920	-43.7%	(5.3%)
Number of Preventive Care Services	0.080	0.113	-29.7%	(12.4%)
Any Hi-Tech Services	0.227	0.253	-10.6%	(0.6%)
Total RVUs, Hi-Tech Services	94.200	105.000	-10.1%	(0.8%)
Number of Hi-Tech Services	0.514	0.559	-8.0%	(0.8%)
Any OBRA89 Overvalued Procedures	0.364	0.398	-8.6%	(0.4%)
Total RVUs, OBRA89 Overvalued Procedures	140.000	158.000	-11.6%	(1.2%)
Number of OBRA89 Overvalued Procedures	1.050	1.120	-5.7%	(0.7%)
Any Services with General/Family Practitioner	0.411	0.365	12.6%	(0.6%)
Any Services with Internist	0.345	0.398	-13.1%	(0.3%)
Any Services with Surgeon	0.419	0.517	-18.8%	(0.3%)
Any Services with Medical Specialist	0.438	0.487	-10.1%	(0.3%)
Any Services with Group/Miscellaneous	0.341	0.448	-23.9%	(0.1%)
Total RVUs with General/Family Practitioner	98.900	78.100	26.7%	(1.6%)
Total RVUs with Internist	127.000	134.000	-5.5%	(1.1%)
Total RVUs with Surgeon	260.000	290.000	-10.3%	(1.0%)
Total RVUs with Medical Specialist	177.000	186.000	-4.7%	(1.7%)
Total RVUs with Group/Miscellaneous	63.100	86.500	-27.0%	(0.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-12 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>30% of Population in Poverty)
Utilization of Visits and Consultations**

	> 30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.709	0.762	-7.0%	(0.3%)
Total RVUs, Primary Care Visits	117.000	122.000	-4.7%	(0.6%)
Number of Primary Care Visits	4.530	4.630	-2.3%	(0.6%)
Any Office Visits	0.622	0.694	-10.4%	(0.3%)
Total RVUs, Office Visits	92.100	99.800	-7.7%	(0.5%)
Number of Office Visits	3.660	3.860	-5.2%	(0.5%)
Any ER/OPD Visits	0.203	0.175	15.6%	(0.9%)
Total RVUs, ER/OPD Visits	14.800	10.700	38.8%	(2.7%)
Number of ER/OPD Visits	0.482	0.323	49.3%	(3.1%)
Any Consultations	0.158	0.180	-11.9%	(0.7%)
Total RVUs, Consultations	28.000	31.600	-11.5%	(1.2%)
Number of Consultations	0.408	0.444	-8.2%	(1.5%)
Any Primary Care Visits, General/Family Practitioner	0.389	0.342	13.7%	(0.5%)
Any Primary Care Visits, Internist	0.264	0.328	-19.7%	(0.4%)
Any Primary Care Visits, Specialist	0.374	0.467	-19.8%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	47.600	37.900	25.3%	(1.4%)
Total RVUs, Primary Care Visits, Internist	30.700	36.600	-16.1%	(0.5%)
Total RVUs, Primary Care Visits, Specialist	38.300	47.800	-19.9%	(0.6%)
Number of Primary Care Visits, General/Family Practitioner	1.910	1.490	28.5%	(1.5%)
Number of Primary Care Visits, Internist	1.180	1.390	-14.9%	(0.5%)
Number of Primary Care Visits, Specialist	1.430	1.760	-18.5%	(0.6%)
Any Consultations with General/Family Practitioner	0.006	0.007	-12.6%	(3.6%)
Any Consultations with Internist	0.052	0.057	-9.0%	(1.7%)
Any Consultations with Specialist	0.132	0.151	-12.1%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	0.669	0.762	-12.2%	(4.7%)
Total RVUs, Consultations with Internist	6.830	8.070	-15.4%	(2.2%)
Total RVUs, Consultations with Specialist	20.500	22.800	-10.1%	(1.5%)
Number of Consultations with General/Family Practitioner	0.010	0.011	-11.6%	(6.6%) NS
Number of Consultations with Internist	0.091	0.112	-18.3%	(2.9%)
Number of Consultations with Specialist	0.306	0.321	-4.5%	(1.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-12 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>30% of Population in Poverty)
Utilization of Cardiac Procedures and Selected Surgeries

	> 30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.334	0.366	-8.8%	(0.5%)
Any Cardiac Ultrasounds	0.044	0.042	4.1%	(2.2%) NS
Any Cardiac Catheterizations	0.012	0.014	-15.1%	(2.2%)
Any PCTAs	0.001	0.001	-25.0%	(10.6%)
Any CABGs	0.002	0.003	-30.8%	(5.6%)
Total RVUs, EKGs	23.400	26.000	-10.1%	(1.2%)
Total RVUs, Cardiac Ultrasounds	7.120	7.090	0.4%	(2.3%) NS
Total RVUs, Cardiac Catheterizations	8.720	10.400	-16.0%	(2.7%)
Total RVUs, PCTAs	1.250	1.760	-28.9%	(11.1%)
Total RVUs, CABGs	8.830	12.300	-28.1%	(5.8%)
Number of EKGs	0.905	0.953	-5.1%	(1.0%)
Number of Cardiac Ultrasounds	0.067	0.066	1.8%	(2.3%) NS
Number of Cardiac Catheterizations	0.017	0.021	-18.7%	(3.4%)
Number of PCTAs	0.001	0.001	-29.9%	(11.2%)
Number of CABGs	0.002	0.003	-28.7%	(5.6%)
Any Cataract Lens Surgeries	0.025	0.026	-6.8%	(1.4%)
Any Joint Prostheses	0.004	0.005	-29.2%	(6.0%)
Any Cholecystectomies	0.005	0.005	-1.3%	(6.2%) NS
Any Hysterectomies	0.001	0.002	-24.6%	(6.7%)
Any TURPs	0.008	0.008	-6.1%	(2.4%)
Total RVUs, Cataract Lens Surgeries	44.800	46.800	-4.3%	(2.3%) NS
Total RVUs, Joint Prostheses	9.300	12.700	-26.7%	(6.3%)
Total RVUs, Cholecystectomies	4.500	4.540	-0.8%	(6.5%) NS
Total RVUs, Hysterectomies	1.420	1.890	-24.9%	(6.9%)
Total RVUs, TURPs	8.660	9.230	-6.2%	(2.5%)
Number of Cataract Lens Surgeries	0.029	0.030	-5.0%	(2.3%)
Number of Joint Prostheses	0.004	0.006	-27.1%	(5.8%)
Number of Cholecystectomies	0.005	0.005	-1.1%	(6.5%) NS
Number of Hysterectomies	0.001	0.002	-24.3%	(6.8%)
Number of TURPs	0.008	0.008	-6.1%	(2.4%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-12 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>30% of Population in Poverty)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	> 30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.040	0.059	-32.1%	(0.9%)
Any Upper GI Endoscopies	0.023	0.021	7.5%	(3.2%)
Any Other Endoscopies	0.032	0.036	-10.5%	(1.3%)
Any Arthroscopies	0.001	0.001	-52.0%	(7.0%)
Total RVUs, Lower GI Endoscopies	10.900	14.700	-26.1%	(1.5%)
Total RVUs, Upper GI Endoscopies	9.080	8.580	5.9%	(3.4%) NS
Total RVUs, Other Endoscopies	9.710	11.000	-11.7%	(2.2%)
Total RVUs, Arthroscopies	0.603	1.200	-49.6%	(9.8%)
Any Radiology Services	0.464	0.503	-7.9%	(0.4%)
Any CAT Scans	0.081	0.084	-4.2%	(1.4%)
Any MRIs	0.002	0.003	-37.4%	(2.4%)
Any Nuclear Imaging Services	0.058	0.060	-3.9%	(1.2%)
Any Non-Cardiac Ultrasounds	0.082	0.079	3.4%	(1.2%)
Total RVUs, Radiology Services	84.900	90.000	-5.8%	(1.5%)
Total RVUs, Cat Scans	13.800	14.400	-4.5%	(1.4%)
Total RVUs, MRIs	0.632	1.310	-51.6%	(5.5%)
Total RVUs, Nuclear Imaging Services	6.240	6.710	-6.9%	(1.8%)
Total RVUs, Non-Cardiac Ultrasounds	8.560	8.490	0.9%	(1.3%) NS
Any Mammograms	0.024	0.045	-46.3%	(2.0%)
Any Pap Smears	0.019	0.027	-31.0%	(1.4%)
Any Pneumonia Vaccines	0.008	0.011	-30.3%	(4.2%)
Any Influenza Vaccines	0.000	0.000	-50.4%	(15.6%)
Total RVUs, Mammograms	1.150	2.330	-50.7%	(2.0%)
Total RVUs, Pap Smears	0.167	0.246	-32.1%	(1.4%)
Total RVUs, Pneumonia Vaccines	0.326	0.339	-3.8%	(56.4%) NS
Total RVUs, Influenza Vaccines	0.001	0.003	-55.8%	(14.3%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-12 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in High-Poverty ZIP Codes (>30% of Population in Poverty)
Hospital Outpatient and Inpatient Services and Mortality Rate**

	>30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.230	0.170	35.4%	(1.0%)
Number of Visits/ER Services	0.847	0.437	94.0%	(2.8%)
Charges, Visits/ER Services	38.800	20.300	91.7%	(4.0%)
Charges, All Services	355.000	308.000	15.2%	(1.4%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.052	0.025	108.3%	(3.7%)
Number of Visits/ER Services	0.270	0.091	196.0%	(6.6%)
Charges, Visits/ER Services	13.100	4.470	193.0%	(11.2%)
Charges, All Services	42.200	27.100	56.0%	(6.7%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.034	0.012	175.7%	(5.3%)
Number of Visits/ER Services	0.165	0.053	209.5%	(5.8%)
Charges, Visits/ER Services	5.750	2.280	152.5%	(9.3%)
Charges, All Services	24.400	13.100	85.6%	(12.4%)
Inpatient Services, Any Hospital				
Discharges, Total	0.395	0.337	17.1%	(1.1%)
Discharges, ACS DRGs	0.090	0.070	29.6%	(3.5%)
Discharges, Low Variation DRGs	0.016	0.017	-3.1%	(4.2%) NS
Admitted Through ER	0.152	0.132	15.2%	(2.5%)
Outlier, Day or Cost	0.015	0.012	26.4%	(5.2%)
Discharged Dead	0.026	0.022	22.3%	(3.2%)
All Deaths				
Mortality Rate	0.052	0.048	9.3%	(1.7%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-13: Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>30% of Population in Poverty)
Utilization by Broad Categories of Service

	URBAN >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	46,600	1,445,000		
Any Services	0.772	0.838	-7.9%	(0.2%)
Total RVUs, All Services	768.000	766.000	0.2%	(1.0%) NS
Number of Services, Total	19.800	19.400	2.1%	(0.8%)
Any Non-Inpatient Services	0.763	0.832	-8.3%	(0.2%)
Total RVUs, Non-Inpatient Services	403.000	430.000	-6.3%	(0.6%)
Number of Non-Inpatient Services	13.300	14.000	-5.0%	(0.8%)
Any Primary Care Services	0.692	0.761	-9.1%	(0.3%)
Total RVUs, Primary Care Services	118.000	122.000	-3.4%	(0.6%)
Number of Primary Care Services	4.480	4.630	-3.3%	(0.7%)
Any Preventive Care Services	0.048	0.075	-35.8%	(2.3%)
Total RVUs, Preventive Care Services	1.790	2.890	-38.0%	(6.1%)
Number of Preventive Care Services	0.081	0.112	-28.1%	(15.2%) NS
Any Hi-Tech Services	0.241	0.252	-4.3%	(0.8%)
Total RVUs, Hi-Tech Services	102.000	104.000	-2.5%	(1.0%)
Number of Hi-Tech Services	0.580	0.556	4.3%	(1.1%)
Any OBRA89 Overvalued Procedures	0.383	0.397	-3.5%	(0.4%)
Total RVUs, OBRA89 Overvalued Procedures	141.000	158.000	-10.6%	(1.4%)
Number of OBRA89 Overvalued Procedures	1.160	1.110	4.5%	(1.0%)
Any Services with General/Family Practitioner	0.327	0.369	-11.3%	(0.7%)
Any Services with Internist	0.385	0.395	-2.6%	(0.3%)
Any Services with Surgeon	0.437	0.514	-15.0%	(0.5%)
Any Services with Medical Specialist	0.444	0.485	-8.5%	(0.4%)
Any Services with Group/Miscellaneous	0.384	0.444	-13.5%	(0.2%)
Total RVUs with General/Family Practitioner	71.000	79.500	-10.7%	(1.7%)
Total RVUs with Internist	147.000	133.000	10.6%	(1.3%)
Total RVUs with Surgeon	267.000	289.000	-7.8%	(1.6%)
Total RVUs with Medical Specialist	209.000	184.000	13.6%	(2.2%)
Total RVUs with Grbup/Miscellaneous	79.800	85.400	-6.5%	(1.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-13 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>30% of Population in Poverty)
Utilization of Visits and Consultations**

	URBAN >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.692	0.761	-9.1%	(0.3%)
Total RVUs, Primary Care Visits	118.000	122.000	-3.2%	(0.7%)
*Number of Primary Care Visits	4.480	4.630	-3.3%	(0.7%)
Any Office Visits	0.583	0.694	-16.0%	(0.2%)
Total RVUs, Office Visits	88.800	99.700	-11.0%	(0.5%)
Number of Office Visits	3.480	3.860	-10.0%	(0.5%)
Any ER/OPD Visits	0.231	0.175	31.7%	(0.8%)
Total RVUs, ER/OPD Visits	19.000	10.700	77.9%	(4.2%)
Number of ER/OPD Visits	0.609	0.323	88.6%	(4.8%)
Any Consultations	0.181	0.178	1.5%	(0.9%) NS
Total RVUs, Consultations	34.300	31.300	9.3%	(2.0%)
Number of Consultations	0.492	0.441	11.6%	(2.1%)
Any Primary Care Visits, General/Family Practitioner	0.309	0.346	-10.7%	(0.6%)
Any Primary Care Visits, Internist	0.307	0.325	-5.8%	(0.4%)
Any Primary Care Visits, Specialist	0.399	0.463	-13.8%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	36.400	38.500	-5.5%	(1.3%)
Total RVUs, Primary Care Visits, Internist	37.300	36.300	2.9%	(1.1%)
Total RVUs, Primary Care Visits, Specialist	44.400	47.300	-6.1%	(0.7%)
Number of Primary Care Visits, General/Family Practitioner	1.400	1.510	-7.5%	(1.3%)
Number of Primary Care Visits, Internist	1.440	1.380	4.5%	(1.2%)
Number of Primary Care Visits, Specialist	1.640	1.740	-5.9%	(0.7%)
Any Consultations with General/Family Practitioner	0.006	0.007	-12.4%	(3.9%)
Any Consultations with Internist	0.059	0.057	4.1%	(1.6%)
Any Consultations with Specialist	0.155	0.150	3.6%	(1.1%)
Total RVUs, Consultations with General/Family Practitioner	0.683	0.759	-10.0%	(4.7%)
Total RVUs, Consultations with Internist	8.010	8.000	0.1%	(2.6%) NS
Total RVUs, Consultations with Specialist	25.600	22.600	13.3%	(2.6%)
Number of Consultations with General/Family Practitioner	0.010	0.011	-10.9%	(5.7%) NS
Number of Consultations with Internist	0.105	0.111	-5.1%	(3.7%) NS
Number of Consultations with Specialist	0.376	0.318	18.1%	(2.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-13 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>30% of Population in Poverty)
Utilization of Cardiac Procedures and Selected Surgeries

	URBAN >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.354	0.365	-2.9%	(0.4%)
Any Cardiac Ultrasounds	0.054	0.042	28.8%	(2.8%)
Any Cardiac Catheterizations	0.012	0.014	-13.4%	(4.4%)
Any PCTAs	0.001	0.001	-29.3%	(14.3%)
Any CABGs	0.002	0.003	-47.2%	(6.7%)
Total RVUs, EKGs	25.300	25.900	-2.1%	(1.4%) NS
Total RVUs, Cardiac Ultrasounds	8.930	7.030	27.0%	(3.3%)
Total RVUs, Cardiac Catheterizations	8.690	10.300	-16.0%	(4.5%)
Total RVUs, PCTAs	1.160	1.750	-33.7%	(14.0%)
Total RVUs, CABGs	6.510	12.300	-46.9%	(7.2%)
Number of EKGs	1.010	0.949	6.1%	(1.2%)
Number of Cardiac Ultrasounds	0.085	0.065	30.7%	(3.2%)
Number of Cardiac Catheterizations	0.018	0.020	-13.1%	(5.4%)
Number of PCTAs	0.001	0.001	-33.5%	(14.4%)
Number of CABGs	0.002	0.003	-46.5%	(7.2%)
Any Cataract Lens Surgeries	0.024	0.026	-7.2%	(2.2%)
Any Joint Prostheses	0.003	0.005	-34.4%	(9.1%)
Any Cholecystectomies	0.004	0.005	-22.3%	(4.6%)
Any Hysterectomies	0.001	0.002	-37.6%	(9.4%)
Any TURPs	0.007	0.008	-9.1%	(3.2%)
Total RVUs, Cataract Lens Surgeries	44.200	46.700	-5.5%	(3.1%) NS
Total RVUs, Joint Prostheses	8.760	12.600	-30.7%	(10.6%)
Total RVUs, Cholecystectomies	3.520	4.570	-22.8%	(5.1%)
Total RVUs, Hysterectomies	1.190	1.890	-36.9%	(9.3%)
Total RVUs, TURPs	8.350	9.230	-9.5%	(3.6%)
Number of Cataract Lens Surgeries	0.029	0.030	-6.0%	(2.9%)
Number of Joint Prostheses	0.004	0.006	-32.1%	(10.1%)
Number of Cholecystectomies	0.004	0.005	-22.1%	(4.7%)
Number of Hysterectomies	0.001	0.002	-37.3%	(9.4%)
Number of TURPs	0.008	0.008	-9.2%	(3.4%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-13 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>30% of Population in Poverty)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	URBAN >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.041	0.058	-29.9%	(2.3%)
Any Upper GI Endoscopies	0.025	0.021	15.4%	(4.2%)
Any Other Endoscopies	0.034	0.036	-5.8%	(2.9%) NS
Any Arthroscopies	0.001	0.001	-54.5%	(8.3%)
Total RVUs, Lower GI Endoscopies	11.500	14.600	-21.5%	(2.9%)
Total RVUs, Upper GI Endoscopies	10.100	8.560	18.2%	(4.0%)
Total RVUs, Other Endoscopies	10.300	10.900	-5.9%	(4.4%) NS
Total RVUs, Arthroscopies	0.592	1.180	-49.9%	(15.2%)
Any Radiology Services	0.466	0.502	-7.2%	(0.5%)
Any CAT Scans	0.090	0.084	6.8%	(1.9%)
Any MRIs	0.003	0.003	-17.7%	(4.6%)
Any Nuclear Imaging Services	0.063	0.060	5.0%	(1.9%)
Any Non-Cardiac Ultrasounds	0.084	0.079	6.8%	(1.8%)
Total RVUs, Radiology Services	92.200	89.700	2.8%	(2.0%) NS
Total RVUs, Cat Scans	15.300	14.400	6.7%	(2.1%)
Total RVUs, MRIs	0.842	1.280	-34.3%	(8.3%)
Total RVUs, Nuclear Imaging Services	7.290	6.660	9.5%	(2.5%)
Total RVUs, Non-Cardiac Ultrasounds	9.430	8.460	11.4%	(2.1%)
Any Mammograms	0.027	0.045	-39.8%	(2.7%)
Any Pap Smears	0.018	0.027	-31.7%	(1.9%)
Any Pneumonia Vaccines	0.006	0.011	-44.7%	(4.2%)
Any Influenza Vaccines	0.000	0.000	-53.8%	(22.6%)
Total RVUs, Mammograms	1.310	2.300	-43.1%	(3.1%)
Total RVUs, Pap Smears	0.164	0.244	-32.7%	(1.8%)
Total RVUs, Pneumonia Vaccines	0.314	0.339	-7.4%	(65.8%) NS
Total RVUs, Influenza Vaccines	0.001	0.002	-58.7%	(19.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-13 (continued): Utilization Rates Per Beneficiary, 1986
Urban (MSA) High-Poverty ZIP Codes (>30% of Population in Poverty)
Hospital Outpatient and Inpatient Services and Mortality Rate**

	URBAN >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.266	0.170	56.2%	(1.3%)
Number of Visits/ER Services	1.130	0.438	157.6%	(4.5%)
Charges, Visits/ER Services	55.800	20.200	176.9%	(6.6%)
Charges, All Services	429.000	306.000	40.1%	(2.7%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.081	0.025	227.8%	(6.4%)
Number of Visits/ER Services	0.440	0.090	387.9%	(11.5%)
Charges, Visits/ER Services	22.200	4.390	407.0%	(19.3%)
Charges, All Services	65.100	26.700	143.9%	(11.1%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.052	0.012	323.3%	(9.9%)
Number of Visits/ER Services	0.265	0.053	401.3%	(10.1%)
Charges, Visits/ER Services	9.640	2.240	330.6%	(15.3%)
Charges, All Services	37.100	13.000	186.1%	(19.9%)
Inpatient Services, Any Hospital				
Discharges, Total	0.366	0.339	8.0%	(1.6%)
Discharges, ACS DRGs	0.080	0.070	14.2%	(4.7%)
Discharges, Low Variation DRGs	0.014	0.017	-18.4%	(5.2%)
Admitted Through ER	0.167	0.132	26.6%	(2.8%)
Outlier, Day or Cost	0.018	0.012	59.2%	(6.5%)
Discharged Dead	0.028	0.022	27.9%	(2.8%)
All Deaths				
Mortality Rate	0.055	0.048	14.8%	(2.2%)

Source: PPRC¹ analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-14: Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>30% of Population in Poverty)
Utilization by Broad Categories of Service

	RURAL >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	36,800	1,455,000		
Any Services	0.795	0.838	-5.1%	(0.4%)
Total RVUs, All Services	662.000	769.000	-14.0%	(0.9%)
Number of Services, Total	17.100	19.500	-12.1%	(0.7%)
Any Non-Inpatient Services	0.787	0.831	-5.4%	(0.3%)
Total RVUs, Non-Inpatient Services	345.000	432.000	-20.2%	(0.7%)
Number of Non-Inpatient Services	11.700	14.000	-16.6%	(0.5%)
Any Primary Care Services	0.730	0.760	-4.0%	(0.3%)
Total RVUs, Primary Care Services	114.000	122.000	-6.1%	(0.7%)
Number of Primary Care Services	4.580	4.630	-1.0%	(0.7%) NS
Any Preventive Care Services	0.046	0.075	-38.1%	(1.8%)
Total RVUs, Preventive Care Services	1.460	2.880	-49.3%	(6.1%)
Number of Preventive Care Services	0.079	0.112	-29.9%	(16.4%) NS
Any Hi-Tech Services	0.208	0.253	-17.9%	(1.1%)
Total RVUs, Hi-Tech Services	84.600	105.000	-19.2%	(1.9%)
Number of Hi-Tech Services	0.431	0.560	-22.9%	(1.2%)
Any OBRA89 Overvalued Procedures	0.340	0.398	-14.5%	(0.7%)
Total RVUs, OBRA89 Overvalued Procedures	138.000	158.000	-12.3%	(1.7%)
Number of OBRA89 Overvalued Procedures	0.917	1.120	-18.0%	(1.1%)
Any Services with General/Family Practitioner	0.517	0.364	41.9%	(1.0%)
Any Services with Internist	0.296	0.397	-25.5%	(0.5%)
Any Services with Surgeon	0.397	0.514	-22.8%	(0.5%)
Any Services with Medical Specialist	0.430	0.486	-11.5%	(0.5%)
Any Services with Group/Miscellaneous	0.286	0.446	-35.7%	(0.4%)
Total RVUs with General/Family Practitioner	134.000	77.900	72.2%	(2.2%)
Total RVUs with Internist	100.000	135.000	-25.4%	(1.4%)
Total RVUs with Surgeon	251.000	289.000	-13.1%	(1.4%)
Total RVUs with Medical Specialist	135.000	186.000	-27.4%	(1.4%)
Total RVUs with Group/Miscellaneous	42.000	86.300	-51.4%	(1.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-14 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>30% of Population in Poverty)
Utilization of Visits and Consultations

	RURAL >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.730	0.760	-4.0%	(0.3%)
Total RVUs, Primary Care Visits	114.000	122.000	-6.4%	(0.7%)
Number of Primary Care Visits	4.580	4.630	-1.0%	(0.7%) NS
Any Office Visits	0.671	0.691	-2.9%	(0.4%)
Total RVUs, Office Visits	96.200	99.500	-3.3%	(0.8%)
Number of Office Visits	3.890	3.850	1.1%	(0.9%) NS
Any ER/OPD Visits	0.167	0.177	-5.5%	(1.1%)
Total RVUs, ER/OPD Visits	9.620	11.000	-12.2%	(1.1%)
Number of ER/OPD Visits	0.322	0.332	-3.0%	(1.6%) NS
Any Consultations	0.130	0.180	-27.8%	(1.0%)
Total RVUs, Consultations	20.100	31.700	-36.6%	(1.7%)
Number of Consultations	0.303	0.446	-32.1%	(2.4%)
Any Primary Care Visits, General/Family Practitioner	0.490	0.341	43.6%	(0.9%)
Any Primary Care Visits, Internist	0.210	0.328	-36.0%	(0.6%)
Any Primary Care Visits, Specialist	0.342	0.464	-26.4%	(0.6%)
Total RVUs, Primary Care Visits, General/Family Practitioner	61.600	37.900	62.5%	(2.0%)
Total RVUs, Primary Care Visits, Internist	22.400	36.700	-38.9%	(0.9%)
Total RVUs, Primary Care Visits, Specialist	30.400	47.700	-36.1%	(0.8%)
Number of Primary Care Visits, General/Family Practitioner	2.550	1.490	72.0%	(2.2%)
Number of Primary Care Visits, Internist	0.861	1.390	-38.1%	(0.7%)
Number of Primary Care Visits, Specialist	1.170	1.750	-33.4%	(0.9%)
Any Consultations with General/Family Practitioner	0.006	0.007	-11.9%	(7.2%) NS
Any Consultations with Internist	0.043	0.057	-24.9%	(2.0%)
Any Consultations with Specialist	0.104	0.151	-30.9%	(1.1%)
Total RVUs, Consultations with General/Family Practitioner	0.655	0.759	-13.7%	(7.5%) NS
Total RVUs, Consultations with Internist	5.330	8.070	-33.9%	(2.3%)
Total RVUs, Consultations with Specialist	14.100	22.900	-38.3%	(1.9%)
Number of Consultations with General/Family Practitioner	0.010	0.011	-11.6%	(9.5%) NS
Number of Consultations with Internist	0.074	0.112	-33.9%	(3.3%)
Number of Consultations with Specialist	0.219	0.323	-32.2%	(2.5%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-14 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>30% of Population in Poverty)
Utilization of Cardiac Procedures and Selected Surgeries

	RURAL >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.309	0.366	-15.7%	(0.8%)
Any Cardiac Ultrasounds	0.031	0.043	-26.6%	(2.0%)
Any Cardiac Catheterizations	0.012	0.014	-16.7%	(4.2%)
Any PCTAs	0.001	0.001	-18.2%	(13.1%) NS
Any CABGs	0.003	0.003	-10.0%	(6.4%) NS
Total RVUs, EKGs	20.900	26.000	-19.5%	(1.3%)
Total RVUs, Cardiac Ultrasounds	4.840	7.150	-32.2%	(1.9%)
Total RVUs, Cardiac Catheterizations	8.740	10.300	-15.4%	(4.7%)
Total RVUs, PCTAs	1.370	1.740	-21.2%	(11.9%) NS
Total RVUs, CABGs	11.500	12.100	-4.8%	(6.5%) NS
Number of EKGs	0.776	0.955	-18.8%	(1.2%)
Number of Cardiac Ultrasounds	0.044	0.066	-33.7%	(2.0%)
Number of Cardiac Catheterizations	0.015	0.021	-24.7%	(4.2%)
Number of PCTAs	0.001	0.001	-23.9%	(11.6%)
Number of CABGs	0.003	0.003	-6.6%	(6.1%) NS
Any Cataract Lens Surgeries	0.025	0.026	-5.8%	(3.3%) NS
Any Joint Prostheses	0.004	0.005	-21.3%	(6.5%)
Any Cholecystectomies	0.006	0.005	25.4%	(11.1%)
Any Hysterectomies	0.002	0.002	-6.0%	(9.9%) NS
Any TURPs	0.008	0.008	-2.4%	(5.1%) NS
Total RVUs, Cataract Lens Surgeries	45.600	46.700	-2.3%	(3.9%) NS
Total RVUs, Joint Prostheses	9.940	12.600	-20.9%	(7.8%)
Total RVUs, Cholecystectomies	5.730	4.500	27.3%	(11.2%)
Total RVUs, Hysterectomies	1.730	1.870	-7.6%	(8.8%) NS
Total RVUs, TURPs	9.000	9.210	-2.2%	(5.1%) NS
Number of Cataract Lens Surgeries	0.029	0.030	-3.3%	(3.8%) NS
Number of Joint Prostheses	0.005	0.006	-19.9%	(6.7%)
Number of Cholecystectomies	0.006	0.005	25.6%	(11.6%)
Number of Hysterectomies	0.002	0.002	-5.7%	(8.7%) NS
Number of TURPs	0.008	0.008	-2.4%	(5.1%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-14 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>30% of Population in Poverty)
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	RURAL >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.039	0.058	-33.4%	(1.2%)
Any Upper GI Endoscopies	0.021	0.021	-2.9%	(2.5%) NS
Any Other Endoscopies	0.030	0.036	-15.6%	(2.7%)
Any Arthroscopies	0.001	0.001	-47.6%	(11.8%)
Total RVUs, Lower GI Endoscopies	10.200	14.600	-30.5%	(2.0%)
Total RVUs, Upper GI Endoscopies	7.800	8.630	-9.5%	(3.2%)
Total RVUs, Other Endoscopies	8.960	11.000	-18.3%	(3.0%)
Total RVUs, Arthroscopies	0.616	1.180	-47.6%	(11.7%)
Any Radiology Services	0.460	0.502	-8.5%	(0.5%)
Any CAT Scans	0.069	0.084	-17.8%	(2.4%)
Any MRIs	0.001	0.003	-60.4%	(3.7%)
Any Nuclear Imaging Services	0.052	0.061	-14.8%	(2.0%)
Any Non-Cardiac Ultrasounds	0.078	0.079	-1.1%	(2.5%) NS
Total RVUs, Radiology Services	75.600	90.100	-16.1%	(1.4%)
Total RVUs, Cat Scans	11.800	14.500	-18.4%	(2.6%)
Total RVUs, MRIs	0.367	1.290	-71.5%	(3.1%)
Total RVUs, Nuclear Imaging Services	4.910	6.730	-27.0%	(2.1%)
Total RVUs, Non-Cardiac Ultrasounds	7.490	8.520	-12.1%	(2.4%)
Any Mammograms	0.021	0.045	-53.2%	(2.0%)
Any Pap Smears	0.019	0.027	-28.9%	(3.0%)
Any Pneumonia Vaccines	0.010	0.011	-11.2%	(5.3%)
Any Influenza Vaccines	0.000	0.000	-44.4%	(23.9%) NS
Total RVUs, Mammograms	0.945	2.300	-58.9%	(2.2%)
Total RVUs, Pap Smears	0.170	0.243	-30.1%	(3.5%)
Total RVUs, Pneumonia Vaccines	0.348	0.338	2.9%	(55.6%) NS
Total RVUs, Influenza Vaccines	0.001	0.002	-50.3%	(22.5%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-14 (continued): Utilization Rates Per Beneficiary, 1986
Rural (non-MSA) High-Poverty ZIP codes (>30% of Population in Poverty)
Hospital Outpatient and Inpatient Services and Mortality Rate**

	RURAL >30% POVERTY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.185	0.173	6.7%	(1.3%)
Number of Visits/ER Services	0.493	0.459	7.3%	(2.9%)
Charges, Visits/ER Services	17.400	21.400	-18.9%	(1.9%)
Charges, All Services	259.000	312.000	-17.0%	(1.8%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.016	0.027	-42.3%	(3.0%)
Number of Visits/ER Services	0.055	0.103	-46.1%	(3.6%)
Charges, Visits/ER Services	1.590	5.060	-68.6%	(2.5%)
Charges, All Services	13.300	28.300	-53.0%	(3.0%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.011	0.014	-17.4%	(4.7%)
Number of Visits/ER Services	0.039	0.060	-35.7%	(5.2%)
Charges, Visits/ER Services	0.858	2.520	-65.9%	(3.4%)
Charges, All Services	8.220	13.900	-40.9%	(6.3%)
Inpatient Services, Any Hospital				
Discharges, Total	0.429	0.338	27.1%	(1.5%)
Discharges, ACS DRGs	0.102	0.070	46.3%	(3.4%)
Discharges, Low Variation DRGs	0.019	0.016	16.0%	(5.3%)
Admitted Through ER	0.133	0.133	0.0%	(2.3%) NS
Outlier, Day or Cost	0.010	0.012	-15.6%	(6.8%)
Discharged Dead	0.025	0.022	13.9%	(4.8%)
All Deaths				
Mortality Rate	0.049	0.048	2.2%	(2.7%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-15: Utilization Rates Per Beneficiary, 1986
Male versus Female Beneficiaries
Utilization by Broad Categories of Service

	MALE	FEMALE	DIFFERENCE	(S.E.)
Number of Beneficiaries	625,000	867,000		
Any Services	0.798	0.864	-7.7%	(0.1%)
Total RVUs, All Services	788.000	751.000	5.0%	(0.2%)
Number of Services, Total	18.600	20.000	-6.8%	(0.2%)
Any Non-Inpatient Services	0.789	0.859	-8.1%	(0.1%)
Total RVUs, Non-Inpatient Services	406.000	447.000	-9.1%	(0.3%)
Number of Non-Inpatient Services	12.800	14.900	-14.1%	(0.3%)
Any Primary Care Services	0.715	0.790	-9.5%	(0.1%)
Total RVUs, Primary Care Services	109.000	131.000	-17.0%	(0.2%)
Number of Primary Care Services	4.130	4.980	-17.0%	(0.2%)
Any Preventive Care Services	0.012	0.118	-89.5%	(0.1%)
Total RVUs, Preventive Care Services	0.414	4.580	-91.0%	(1.1%)
Number of Preventive Care Services	0.038	0.163	-76.4%	(3.1%)
Any Hi-Tech Services	0.259	0.247	5.0%	(0.3%)
Total RVUs, Hi-Tech Services	122.000	91.400	34.0%	(0.9%)
Number of Hi-Tech Services	0.595	0.529	12.5%	(0.4%)
Any OBRA89 Overvalued Procedures	0.397	0.396	0.2%	(0.3%) NS
Total RVUs, OBRA89 Overvalued Procedures	174.000	145.000	20.2%	(0.7%)
Number of OBRA89 Overvalued Procedures	1.190	1.060	12.2%	(0.5%)
Any Services with General/Family Practitioner	0.342	0.386	-11.6%	(0.3%)
Any Services with Internist	0.370	0.413	-10.4%	(0.2%)
Any Services with Surgeon	0.475	0.537	-11.7%	(0.1%)
Any Services with Medical Specialist	0.466	0.497	-6.2%	(0.2%)
Any Services with Group/Miscellaneous	0.408	0.466	-12.6%	(0.2%)
Total RVUs with General/Family Practitioner	72.100	84.400	-14.6%	(0.4%)
Total RVUs with Internist	134.000	134.000	-0.2%	(0.5%) NS
Total RVUs with Surgeon	297.000	282.000	5.4%	(0.4%)
Total RVUs with Medical Specialist	206.000	170.000	21.1%	(0.5%)
Total RVUs with Group/Miscellaneous	86.000	84.700	1.6%	(0.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-15 (continued): Utilization Rates Per Beneficiary, 1986
Male versus Female Beneficiaries
Utilization of Visits and Consultations

	MALE	FEMALE	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.715	0.790	-9.5%	(0.1%)
Total RVUs, Primary Care Visits	109.000	131.000	-16.8%	(0.2%)
Number of Primary Care Visits	4.130	4.980	-17.0%	(0.2%)
Any Office Visits	0.655	0.715	-8.4%	(0.1%)
Total RVUs, Office Visits	90.500	106.000	-14.3%	(0.2%)
Number of Office Visits	3.510	4.090	-14.2%	(0.2%)
Any ER/OPD Visits	0.176	0.178	-1.0%	(0.4%)
Total RVUs, ER/OPD Visits	11.000	10.900	0.7%	(0.5%) NS
Number of ER/OPD Visits	0.332	0.331	0.3%	(0.5%) NS
Any Consultations	0.184	0.175	4.9%	(0.3%)
Total RVUs, Consultations	33.600	29.900	12.6%	(1.0%)
Number of Consultations	0.474	0.420	12.9%	(1.1%)
Any Primary Care Visits, General/Family Practitioner	0.317	0.365	-13.2%	(0.3%)
Any Primary Care Visits, Internist	0.294	0.346	-15.0%	(0.2%)
Any Primary Care Visits, Specialist	0.445	0.473	-6.0%	(0.2%)
Total RVUs, Primary Care Visits, General/Family Practitioner	32.900	42.400	-22.5%	(0.4%)
Total RVUs, Primary Care Visits, Internist	31.400	39.800	-21.1%	(0.3%)
Total RVUs, Primary Care Visits, Specialist	44.800	49.000	-8.5%	(0.2%)
Number of Primary Care Visits, General/Family Practitioner	1.290	1.670	-23.0%	(0.4%)
Number of Primary Care Visits, Internist	1.190	1.510	-21.3%	(0.3%)
Number of Primary Care Visits, Specialist	1.660	1.800	-7.9%	(0.2%)
Any Consultations with General/Family Practitioner	0.007	0.007	-0.1%	(2.8%) NS
Any Consultations with Internist	0.059	0.055	6.9%	(0.5%)
Any Consultations with Specialist	0.155	0.146	6.6%	(0.4%)
Total RVUs, Consultations with General/Family Practitioner	0.751	0.760	-1.2%	(3.0%) NS
Total RVUs, Consultations with Internist	8.430	7.700	9.5%	(0.9%)
Total RVUs, Consultations with Specialist	24.400	21.400	14.2%	(1.1%)
Number of Consultations with General/Family Practitioner	0.011	0.011	-2.2%	(3.7%) NS
Number of Consultations with Internist	0.116	0.107	9.1%	(1.2%)
Number of Consultations with Specialist	0.346	0.302	14.9%	(1.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-15 (continued): Utilization Rates Per Beneficiary, 1986
Male versus Female Beneficiaries
Utilization of Cardiac Procedures and Selected Surgeries

	MALE	FEMALE	DIFFERENCE	(S.E.)
Any EKGs	0.366	0.364	0.6%	(0.3%) NS
Any Cardiac Ultrasounds	0.045	0.040	12.4%	(0.9%)
Any Cardiac Catheterizations	0.019	0.011	80.8%	(2.6%)
Any PCTAs	0.001	0.001	115.2%	(13.1%)
Any CABGs	0.005	0.002	193.5%	(11.3%)
Total RVUs, EKGs	28.200	24.200	16.5%	(0.7%)
Total RVUs, Cardiac Ultrasounds	7.650	6.700	14.2%	(0.9%)
Total RVUs, Cardiac Catheterizations	14.200	7.510	88.9%	(3.3%)
Total RVUs, PCTAs	2.520	1.160	116.3%	(13.1%)
Total RVUs, CABGs	19.900	6.540	204.2%	(12.8%)
Number of EKGs	1.020	0.904	12.6%	(0.5%)
Number of Cardiac Ultrasounds	0.071	0.062	13.8%	(0.9%)
Number of Cardiac Catheterizations	0.028	0.015	88.1%	(4.3%)
Number of PCTAs	0.002	0.001	114.1%	(12.7%)
Number of CABGs	0.005	0.002	196.2%	(12.3%)
Any Cataract Lens Surgeries	0.022	0.030	-26.7%	(0.5%)
Any Joint Prostheses	0.004	0.006	-37.5%	(1.5%)
Any Cholecystectomies	0.004	0.005	-13.7%	(2.6%)
Any Hysterectomies	0.000	0.003	.	.
Any TURPs	0.020	0.000	.	.
Total RVUs, Cataract Lens Surgeries	38.600	52.400	-26.2%	(0.5%)
Total RVUs, Joint Prostheses	9.560	14.600	-34.6%	(1.6%)
Total RVUs, Cholecystectomies	4.170	4.790	-13.0%	(2.8%)
Total RVUs, Hysterectomies	0.007	3.190	.	.
Total RVUs, TURPs	22.100	0.017	.	.
Number of Cataract Lens Surgeries	0.025	0.034	-26.0%	(0.5%)
Number of Joint Prostheses	0.004	0.007	-36.9%	(1.8%)
Number of Cholecystectomies	0.005	0.005	-13.2%	(2.7%)
Number of Hysterectomies	0.000	0.003	.	.
Number of TURPs	0.020	0.000	.	.

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
. indicates that figures are not applicable.

Table B-15 (continued): Utilization Rates Per Beneficiary, 1986
Male versus Female Beneficiaries
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	MALE	FEMALE	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.059	0.057	4.5%	(0.7%)
Any Upper GI Endoscopies	0.022	0.021	7.8%	(1.1%)
Any Other Endoscopies	0.049	0.026	88.3%	(1.2%)
Any Arthroscopies	0.001	0.001	-9.0%	(5.8%) NS
Total RVUs, Lower GI Endoscopies	15.800	13.600	16.4%	(1.5%)
Total RVUs, Upper GI Endoscopies	9.210	8.180	12.6%	(1.8%)
Total RVUs, Other Endoscopies	15.800	7.460	111.5%	(2.7%)
Total RVUs, Arthroscopies	1.090	1.210	-10.1%	(5.3%) NS
Any Radiology Services	0.468	0.525	-10.9%	(0.2%)
Any CAT Scans	0.088	0.081	7.5%	(0.7%)
Any MRIs	0.003	0.003	10.2%	(3.7%)
Any Nuclear Imaging Services	0.064	0.058	11.0%	(0.6%)
Any Non-Cardiac Ultrasounds	0.072	0.084	-14.6%	(0.4%)
Total RVUs, Radiology Services	91.600	88.400	3.5%	(0.5%)
Total RVUs, Cat Scans	15.400	13.700	12.4%	(0.9%)
Total RVUs, MRIs	1.350	1.210	11.6%	(4.8%)
Total RVUs, Nuclear Imaging Services	7.370	6.200	18.9%	(1.0%)
Total RVUs, Non-Cardiac Ultrasounds	7.660	9.090	-15.7%	(0.7%)
Any Mammograms	0.001	0.075	-98.9%	(0.1%)
Any Pap Smears	0.000	0.045	-99.1%	(0.1%)
Any Pneumonia Vaccines	0.011	0.011	1.5%	(2.1%) NS
Any Influenza Vaccines	0.000	0.000	6.9%	(11.3%) NS
Total RVUs, Mammograms	0.040	3.850	-99.0%	(0.1%)
Total RVUs, Pap Smears	0.004	0.410	-99.1%	(0.1%)
Total RVUs, Pneumonia Vaccines	0.368	0.317	16.2%	(15.3%) NS
Total RVUs, Influenza Vaccines	0.003	0.002	17.2%	(12.4%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-15 (continued): Utilization Rates Per Beneficiary, 1986
Male versus Female Beneficiaries
Hospital Outpatient and Inpatient Services and Mortality Rate

	MALE	FEMALE	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.171	0.175	-1.8%	(0.3%)
Number of Visits/ER Services	0.457	0.462	-1.0%	(0.7%) NS
Charges, Visits/ER Services	21.400	21.300	0.6%	(0.9%) NS
Charges, All Services	321.000	303.000	5.9%	(0.6%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.028	0.026	7.5%	(0.9%)
Number of Visits/ER Services	0.105	0.099	6.1%	(1.5%)
Charges, Visits/ER Services	5.210	4.790	8.7%	(1.2%)
Charges, All Services	30.000	26.500	13.3%	(2.9%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.014	0.013	9.9%	(1.6%)
Number of Visits/ER Services	0.061	0.059	2.4%	(2.4%) NS
Charges, Visits/ER Services	2.590	2.390	8.4%	(2.5%)
Charges, All Services	15.300	12.700	20.5%	(5.1%)
Inpatient Services, Any Hospital				
Discharges, Total	0.366	0.322	13.7%	(0.5%)
Discharges, ACS DRGs	0.075	0.067	11.8%	(1.2%)
Discharges, Low Variation DRGs	0.022	0.013	67.1%	(2.2%)
Admitted Through ER	0.139	0.128	9.0%	(0.6%)
Outlier, Day or Cost	0.013	0.011	25.7%	(1.7%)
Discharged Dead	0.026	0.019	33.2%	(1.0%)
All Deaths				
Mortality Rate	0.056	0.043	30.5%	(1.1%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-16: Utilization Rates Per Beneficiary, 1986
Black versus Other Beneficiaries
Utilization by Broad Categories of Service

	BLACK	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	127,000	1,365,000		
Any Services	0.769	0.843	-8.8%	(0.2%)
Total RVUs, All Services	710.000	771.000	-7.9%	(0.6%)
Number of Services, Total	19.000	19.400	-2.0%	(0.6%)
Any Non-Inpatient Services	0.759	0.836	-9.2%	(0.2%)
Total RVUs, Non-Inpatient Services	374.000	434.000	-13.7%	(0.6%)
Number of Non-Inpatient Services	12.800	14.100	-8.7%	(0.5%)
Any Primary Care Services	0.693	0.765	-9.4%	(0.2%)
Total RVUs, Primary Care Services	119.000	122.000	-2.3%	(0.5%)
Number of Primary Care Services	4.470	4.640	-3.6%	(0.5%)
Any Preventive Care Services	0.048	0.076	-37.2%	(0.8%)
Total RVUs, Preventive Care Services	1.610	2.960	-45.6%	(3.3%)
Number of Preventive Care Services	0.069	0.115	-39.7%	(7.4%)
Any Hi-Tech Services	0.227	0.254	-10.6%	(0.6%)
Total RVUs, Hi-Tech Services	94.900	105.000	-9.6%	(1.0%)
Number of Hi-Tech Services	0.544	0.557	-2.4%	(1.0%)
Any OBRA89 Overvalued Procedures	0.365	0.399	-8.6%	(0.4%)
Total RVUs, OBRA89 Overvalued Procedures	120.000	161.000	-25.4%	(0.7%)
Number of OBRA89 Overvalued Procedures	1.100	1.110	-1.1%	(0.9%) NS
Any Services with General/Family Practitioner	0.343	0.370	-7.4%	(0.5%)
Any Services with Internist	0.367	0.397	-7.5%	(0.4%)
Any Services with Surgeon	0.390	0.522	-25.3%	(0.3%)
Any Services with Medical Specialist	0.422	0.490	-13.8%	(0.2%)
Any Services with Group/Miscellaneous	0.384	0.447	-14.0%	(0.4%)
Total RVUs with General/Family Practitioner	80.800	79.100	2.1%	(1.0%)
Total RVUs with Internist	149.000	132.000	13.0%	(1.7%)
Total RVUs with Surgeon	231.000	293.000	-21.2%	(0.8%)
Total RVUs with Medical Specialist	181.000	185.000	-2.0%	(0.9%)
Total RVUs with Group/Miscellaneous	75.700	85.900	-12.0%	(1.2%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-16 (continued): Utilization Rates Per Beneficiary, 1986
Black versus Other Beneficiaries
Utilization of Visits and Consultations

	BLACK	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.693	0.765	-9.4%	(0.2%)
Total RVUs, Primary Care Visits	120.000	122.000	-2.1%	(0.5%)
Number of Primary Care Visits	4.470	4.640	-3.6%	(0.5%)
Any Office Visits	0.585	0.700	-16.4%	(0.3%)
Total RVUs, Office Visits	90.300	100.000	-9.9%	(0.5%)
Number of Office Visits	3.470	3.890	-10.6%	(0.5%)
Any ER/OPD Visits	0.233	0.172	36.1%	(0.7%)
Total RVUs, ER/OPD Visits	18.600	10.200	82.2%	(1.5%)
Number of ER/OPD Visits	0.592	0.308	92.3%	(1.4%)
Any Consultations	0.162	0.180	-10.2%	(0.8%)
Total RVUs, Consultations	33.100	31.300	6.1%	(1.6%)
Number of Consultations	0.478	0.439	8.9%	(1.9%)
Any Primary Care Visits, General/Family Practitioner	0.325	0.347	-6.3%	(0.5%)
Any Primary Care Visits, Internist	0.287	0.328	-12.4%	(0.5%)
Any Primary Care Visits, Specialist	0.373	0.469	-20.6%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	40.700	38.300	6.4%	(0.9%)
Total RVUs, Primary Care Visits, Internist	36.600	36.300	0.8%	(1.0%) NS
Total RVUs, Primary Care Visits, Specialist	42.300	47.700	-11.2%	(0.8%)
Number of Primary Care Visits, General/Family Practitioner	1.560	1.510	3.5%	(0.8%)
Number of Primary Care Visits, Internist	1.380	1.380	0.4%	(0.9%) NS
Number of Primary Care Visits, Specialist	1.530	1.760	-12.8%	(0.8%)
Any Consultations with General/Family Practitioner	0.007	0.007	-6.0%	(3.3%) NS
Any Consultations with Internist	0.059	0.057	3.8%	(1.9%)
Any Consultations with Specialist	0.135	0.151	-10.5%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	0.835	0.749	11.5%	(6.9%) NS
Total RVUs, Consultations with Internist	9.220	7.890	16.9%	(2.6%)
Total RVUs, Consultations with Specialist	23.100	22.600	2.1%	(1.4%) NS
Number of Consultations with General/Family Practitioner	0.013	0.011	18.6%	(9.9%) NS
Number of Consultations with Internist	0.132	0.109	21.0%	(3.4%)
Number of Consultations with Specialist	0.333	0.319	4.5%	(1.6%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-16 (continued): Utilization Rates Per Beneficiary, 1986
Black versus Other Beneficiaries
Utilization of Cardiac Procedures and Selected Surgeries

	BLACK	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.339	0.367	-7.6%	(0.4%)
Any Cardiac Ultrasounds	0.049	0.042	17.3%	(1.6%)
Any Cardiac Catheterizations	0.010	0.015	-34.7%	(1.5%)
Any PCTAs	0.000	0.001	-65.3%	(4.3%)
Any CABGs	0.001	0.003	-71.1%	(1.6%)
Total RVUs, EKGs	24.100	26.000	-7.3%	(0.7%)
Total RVUs, Cardiac Ultrasounds	8.050	6.990	15.1%	(2.6%)
Total RVUs, Cardiac Catheterizations	6.310	10.700	-40.8%	(1.7%)
Total RVUs, PCTAs	0.632	1.830	-65.4%	(5.1%)
Total RVUs, CABGs	3.850	12.800	-70.0%	(2.2%)
Number of EKGs	0.965	0.949	1.7%	(1.0%) NS
Number of Cardiac Ultrasounds	0.076	0.065	17.7%	(2.3%)
Number of Cardiac Catheterizations	0.014	0.021	-32.7%	(2.0%)
Number of PCTAs	0.000	0.001	-66.2%	(5.1%)
Number of CABGs	0.001	0.003	-70.2%	(2.0%)
Any Cataract Lens Surgeries	0.019	0.027	-30.2%	(1.7%)
Any Joint Prostheses	0.003	0.005	-51.0%	(2.7%)
Any Cholecystectomies	0.003	0.005	-42.6%	(2.4%)
Any Hysterectomies	0.001	0.002	-45.2%	(6.0%)
Any TURPs	0.008	0.008	-5.1%	(4.0%) NS
Total RVUs, Cataract Lens Surgeries	33.900	47.800	-28.9%	(1.8%)
Total RVUs, Joint Prostheses	6.810	13.000	-47.6%	(3.2%)
Total RVUs, Cholecystectomies	2.630	4.710	-44.1%	(2.3%)
Total RVUs, Hysterectomies	1.010	1.940	-48.0%	(5.7%)
Total RVUs, TURPs	8.850	9.230	-4.1%	(4.1%) NS
Number of Cataract Lens Surgeries	0.022	0.031	-29.3%	(1.7%)
Number of Joint Prostheses	0.003	0.006	-49.1%	(3.0%)
Number of Cholecystectomies	0.003	0.005	-42.6%	(2.3%)
Number of Hysterectomies	0.001	0.002	-46.8%	(5.7%)
Number of TURPs	0.008	0.008	-4.5%	(4.0%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-16 (continued): Utilization Rates Per Beneficiary, 1986
Black versus Other Beneficiaries
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	BLACK	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.040	0.059	-32.6%	(1.3%)
Any Upper GI Endoscopies	0.023	0.021	9.4%	(2.9%)
Any Other Endoscopies	0.030	0.036	-17.7%	(1.8%)
Any Arthroscopies	0.000	0.001	-64.6%	(6.1%)
Total RVUs, Lower GI Endoscopies	11.300	14.800	-23.7%	(1.2%)
Total RVUs, Upper GI Endoscopies	9.240	8.560	7.9%	(1.9%)
Total RVUs, Other Endoscopies	8.910	11.100	-19.8%	(1.8%)
Total RVUs, Arthroscopies	0.423	1.230	-65.7%	(7.5%)
Any Radiology Services	0.448	0.506	-11.4%	(0.3%)
Any CAT Scans	0.086	0.084	2.4%	(0.6%)
Any MRIs	0.002	0.003	-38.8%	(3.9%)
Any Nuclear Imaging Services	0.060	0.060	-1.0%	(1.7%) NS
Any Non-Cardiac Ultrasounds	0.079	0.079	-0.9%	(1.4%) NS
Total RVUs, Radiology Services	82.500	90.400	-8.7%	(0.7%)
Total RVUs, Cat Scans	14.400	14.400	-0.4%	(1.2%) NS
Total RVUs, MRIs	0.727	1.320	-45.1%	(3.7%)
Total RVUs, Nuclear Imaging Services	6.660	6.670	-0.2%	(2.0%) NS
Total RVUs, Non-Cardiac Ultrasounds	8.370	8.490	-1.5%	(2.1%) NS
Any Mammograms	0.027	0.046	-41.7%	(1.0%)
Any Pap Smears	0.020	0.027	-27.8%	(1.3%)
Any Pneumonia Vaccines	0.005	0.011	-52.6%	(2.3%)
Any Influenza Vaccines	0.000	0.000	-54.5%	(16.4%)
Total RVUs, Mammograms	1.250	2.360	-47.3%	(0.9%)
Total RVUs, Pap Smears	0.177	0.247	-28.4%	(1.1%)
Total RVUs, Pneumonia Vaccines	0.188	0.351	-46.3%	(20.9%)
Total RVUs, Influenza Vaccines	0.001	0.003	-56.9%	(14.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-16 (continued): Utilization Rates Per Beneficiary, 1986
Black versus Other Beneficiaries
Hospital Outpatient and Inpatient Services and Mortality Rate

	BLACK	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.268	0.164	62.8%	(0.9%)
Number of Visits/ER Services	1.040	0.405	157.5%	(2.4%)
Charges, Visits/ER Services	50.600	18.500	173.2%	(3.2%)
Charges, All Services	451.000	295.000	53.0%	(1.8%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.073	0.022	230.8%	(6.4%)
Number of Visits/ER Services	0.356	0.077	361.5%	(9.9%)
Charges, Visits/ER Services	18.300	3.700	394.2%	(13.9%)
Charges, All Services	59.300	24.900	138.0%	(8.7%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.051	0.010	408.6%	(8.5%)
Number of Visits/ER Services	0.253	0.041	513.9%	(14.6%)
Charges, Visits/ER Services	10.800	1.660	549.9%	(19.8%)
Charges, All Services	40.300	11.100	261.8%	(18.1%)
Inpatient Services, Any Hospital				
Discharges, Total	0.357	0.338	5.5%	(1.0%)
Discharges, ACS DRGs	0.078	0.070	11.2%	(2.3%)
Discharges, Low Variation DRGs	0.011	0.017	-37.3%	(1.9%)
Admitted Through ER	0.163	0.130	25.8%	(1.4%)
Outlier, Day or Cost	0.018	0.011	62.9%	(4.6%)
Discharged Dead	0.025	0.021	18.6%	(1.0%)
All Deaths				
Mortality Rate	0.055	0.047	15.8%	(1.1%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-17: Utilization Rates Per Beneficiary, 1986
Black Beneficiaries Living in the South
Utilization by Broad Categories of Service

	BLACK SOUTH	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	73,200	1,419,000		
Any Services	0.757	0.840	-9.9%	(0.3%)
Total RVUs, All Services	631.000	773.000	-18.3%	(0.5%)
Number of Services, Total	16.800	19.500	-13.8%	(0.5%)
Any Non-Inpatient Services	0.749	0.834	-10.2%	(0.3%)
Total RVUs, Non-Inpatient Services	329.000	434.000	-24.3%	(0.7%)
Number of Non-Inpatient Services	11.400	14.100	-19.5%	(0.5%)
Any Primary Care Services	0.686	0.763	-10.1%	(0.3%)
Total RVUs, Primary Care Services	106.000	122.000	-13.4%	(0.6%)
Number of Primary Care Services	4.040	4.660	-13.2%	(0.4%)
Any Preventive Care Services	0.043	0.076	-43.5%	(1.0%)
Total RVUs, Preventive Care Services	1.210	2.930	-58.9%	(0.9%)
Number of Preventive Care Services	0.050	0.114	-56.5%	(1.2%)
Any Hi-Tech Services	0.205	0.254	-19.6%	(0.9%)
Total RVUs, Hi-Tech Services	84.200	105.000	-20.0%	(0.8%)
Number of Hi-Tech Services	0.463	0.561	-17.6%	(1.0%)
Any OBRA89 Overvalued Procedures	0.334	0.399	-16.3%	(0.4%)
Total RVUs, OBRA89 Overvalued Procedures	111.000	160.000	-30.6%	(1.0%)
Number of OBRA89 Overvalued Procedures	0.936	1.120	-16.6%	(0.8%)
Any Services with General/Family Practitioner	0.396	0.366	8.2%	(0.8%)
Any Services with Internist	0.352	0.397	-11.3%	(0.4%)
Any Services with Surgeon	0.360	0.519	-30.7%	(0.4%)
Any Services with Medical Specialist	0.405	0.488	-17.1%	(0.5%)
Any Services with Group/Miscellaneous	0.306	0.449	-31.7%	(0.6%)
Total RVUs with General/Family Practitioner	91.400	78.600	16.3%	(0.9%)
Total RVUs with Internist	128.000	134.000	-4.3%	(1.0%)
Total RVUs with Surgeon	213.000	292.000	-26.9%	(0.6%)
Total RVUs with Medical Specialist	162.000	186.000	-13.0%	(1.8%)
Total RVUs with Group/Miscellaneous	43.300	87.400	-50.5%	(0.6%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-17 (continued): Utilization Rates Per Beneficiary, 1986
Black Beneficiaries Living in the South
Utilization of Visits and Consultations

	BLACK SOUTH	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.686	0.763	-10.1%	(0.3%)
Total RVUs, Primary Care Visits	106.000	123.000	-13.5%	(0.5%)
Number of Primary Care Visits	4.040	4.660	-13.2%	(0.4%)
Any Office Visits	0.590	0.696	-15.2%	(0.4%)
Total RVUs, Office Visits	82.400	100.000	-17.8%	(0.6%)
Number of Office Visits	3.220	3.880	-17.2%	(0.5%)
Any ER/OPD Visits	0.219	0.175	25.2%	(1.3%)
Total RVUs, ER/OPD Visits	15.600	10.700	46.0%	(2.1%)
Number of ER/OPD Visits	0.500	0.323	54.8%	(2.2%)
Any Consultations	0.136	0.181	-24.5%	(0.7%)
Total RVUs, Consultations	26.100	31.700	-17.8%	(1.4%)
Number of Consultations	0.396	0.444	-10.8%	(1.8%)
Any Primary Care Visits, General/Family Practitioner	0.377	0.343	10.0%	(0.8%)
Any Primary Care Visits, Internist	0.270	0.327	-17.5%	(0.6%)
Any Primary Care Visits, Specialist	0.319	0.469	-32.0%	(0.5%)
Total RVUs, Primary Care Visits, General/Family Practitioner	45.100	38.200	18.1%	(1.2%)
Total RVUs, Primary Care Visits, Internist	30.400	36.600	-16.9%	(0.9%)
Total RVUs, Primary Care Visits, Specialist	30.700	48.100	-36.1%	(0.6%)
Number of Primary Care Visits, General/Family Practitioner	1.750	1.500	17.0%	(1.2%)
Number of Primary Care Visits, Internist	1.160	1.390	-16.8%	(0.8%)
Number of Primary Care Visits, Specialist	1.130	1.770	-35.9%	(0.6%)
Any Consultations with General/Family Practitioner	0.008	0.007	8.2%	(5.0%) NS
Any Consultations with Internist	0.052	0.057	-9.8%	(1.6%)
Any Consultations with Specialist	0.110	0.152	-27.3%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	0.972	0.746	30.4%	(11.2%)
Total RVUs, Consultations with Internist	7.440	8.030	-7.3%	(2.1%)
Total RVUs, Consultations with Specialist	17.600	22.900	-23.0%	(1.4%)
Number of Consultations with General/Family Practitioner	0.016	0.011	45.9%	(16.5%)
Number of Consultations with Internist	0.106	0.111	-4.3%	(3.0%) NS
Number of Consultations with Specialist	0.274	0.322	-14.9%	(1.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-17 (continued): Utilization Rates Per Beneficiary, 1986
Black Beneficiaries Living in the South
Utilization of Cardiac Procedures and Selected Surgeries

	BLACK SOUTH	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.308	0.367	-16.1%	(0.4%)
Any Cardiac Ultrasounds	0.041	0.043	-4.1%	(2.1%) NS
Any Cardiac Catheterizations	0.009	0.015	-39.2%	(2.8%)
Any PCTAs	0.000	0.001	-74.6%	(5.8%)
Any CABGs	0.001	0.003	-70.1%	(3.5%)
Total RVUs, EKGs	19.700	26.200	-24.7%	(0.7%)
Total RVUs, Cardiac Ultrasounds	6.200	7.130	-13.1%	(2.0%)
Total RVUs, Cardiac Catheterizations	6.030	10.500	-42.6%	(2.5%)
Total RVUs, PCTAs	0.423	1.790	-76.4%	(5.3%)
Total RVUs, CABGs	3.670	12.500	-70.7%	(3.7%)
Number of EKGs	0.811	0.958	-15.3%	(0.8%)
Number of Cardiac Ultrasounds	0.059	0.066	-10.4%	(2.0%)
Number of Cardiac Catheterizations	0.013	0.021	-39.1%	(2.9%)
Number of PCTAs	0.000	0.001	-77.2%	(5.1%)
Number of CABGs	0.001	0.003	-70.6%	(3.6%)
Any Cataract Lens Surgeries	0.019	0.027	-30.0%	(2.0%)
Any Joint Prostheses	0.002	0.005	-53.6%	(2.2%)
Any Cholecystectomies	0.003	0.005	-37.7%	(1.5%)
Any Hysterectomies	0.001	0.002	-37.3%	(9.1%)
Any TURPs	0.008	0.008	-1.4%	(4.4%) NS
Total RVUs, Cataract Lens Surgeries	33.300	47.300	-29.7%	(2.0%)
Total RVUs, Joint Prostheses	6.540	12.800	-48.9%	(2.8%)
Total RVUs, Cholecystectomies	2.820	4.620	-39.0%	(1.9%)
Total RVUs, Hysterectomies	1.140	1.900	-40.2%	(8.7%)
Total RVUs, TURPs	9.080	9.210	-1.4%	(4.3%) NS
Number of Cataract Lens Surgeries	0.022	0.031	-30.0%	(1.9%)
Number of Joint Prostheses	0.003	0.006	-49.4%	(3.1%)
Number of Cholecystectomies	0.003	0.005	-37.9%	(1.5%)
Number of Hysterectomies	0.001	0.002	-38.9%	(8.5%)
Number of TURPs	0.008	0.008	-1.2%	(4.2%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-17 (continued): Utilization Rates Per Beneficiary, 1986
Black Beneficiaries Living in the South
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	BLACK SOUTH	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.035	0.059	-39.5%	(1.3%)
Any Upper GI Endoscopies	0.021	0.021	0.1%	(3.7%) NS
Any Other Endoscopies	0.028	0.036	-23.9%	(2.3%)
Any Arthroscopies	0.000	0.001	-69.9%	(6.0%)
Total RVUs, Lower GI Endoscopies	9.630	14.800	-34.7%	(1.6%)
Total RVUs, Upper GI Endoscopies	8.510	8.620	-1.3%	(2.3%) NS
Total RVUs, Other Endoscopies	8.150	11.100	-26.3%	(2.3%)
Total RVUs, Arthroscopies	0.303	1.210	-74.9%	(5.1%)
Any Radiology Services	0.428	0.505	-15.3%	(0.4%)
Any CAT Scans	0.080	0.084	-5.2%	(0.7%)
Any MRIs	0.002	0.003	-50.8%	(4.9%)
Any Nuclear Imaging Services	0.052	0.061	-13.7%	(1.8%)
Any Non-Cardiac Ultrasounds	0.071	0.080	-10.5%	(1.3%)
Total RVUs, Radiology Services	74.000	90.500	-18.2%	(0.8%)
Total RVUs, Cat Scans	13.200	14.500	-8.9%	(1.5%)
Total RVUs, MRIs	0.565	1.310	-56.8%	(5.9%)
Total RVUs, Nuclear Imaging Services	5.450	6.740	-19.1%	(1.4%)
Total RVUs, Non-Cardiac Ultrasounds	6.840	8.570	-20.2%	(1.6%)
Any Mammograms	0.021	0.045	-54.6%	(1.3%)
Any Pap Smears	0.020	0.027	-27.6%	(1.8%)
Any Pneumonia Vaccines	0.006	0.011	-47.8%	(2.9%)
Any Influenza Vaccines	0.000	0.000	-90.4%	(6.3%)
Total RVUs, Mammograms	0.972	2.340	-58.4%	(1.3%)
Total RVUs, Pap Smears	0.175	0.245	-28.5%	(1.7%)
Total RVUs, Pneumonia Vaccines	0.059	0.352	-83.2%	(2.5%)
Total RVUs, Influenza Vaccines	0.000	0.003	-91.4%	(5.4%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-17 (continued): Utilization Rates Per Beneficiary, 1986
Black Beneficiaries Living in the South
Hospital Outpatient and Inpatient Services and Mortality Rate**

	BLACK SOUTH	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.238	0.170	40.3%	(1.0%)
Number of Visits/ER Services	0.817	0.441	85.2%	(1.8%)
Charges, Visits/ER Services	30.200	20.900	44.7%	(2.0%)
Charges, All Services	389.000	305.000	27.3%	(3.1%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.081	0.024	242.1%	(5.5%)
Number of Visits/ER Services	0.375	0.087	331.9%	(8.1%)
Charges, Visits/ER Services	12.900	4.550	184.4%	(5.0%)
Charges, All Services	60.800	26.200	132.4%	(12.1%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.064	0.011	479.4%	(5.8%)
Number of Visits/ER Services	0.310	0.046	565.7%	(12.7%)
Charges, Visits/ER Services	10.800	2.030	431.6%	(10.7%)
Charges, All Services	45.800	12.000	281.6%	(25.2%)
Inpatient Services, Any Hospital				
Discharges, Total	0.343	0.340	1.1%	(1.1%) NS
Discharges, ACS DRGs	0.074	0.071	4.3%	(2.3%) NS
Discharges, Low Variation DRGs	0.011	0.017	-36.2%	(3.9%)
Admitted Through ER	0.146	0.132	10.6%	(1.7%)
Outlier, Day or Cost	0.015	0.012	33.2%	(3.0%)
Discharged Dead	0.024	0.022	11.3%	(2.2%)
All Deaths				
Mortality Rate	0.055	0.048	15.6%	(1.4%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-18: Utilization Rates Per Beneficiary, 1986
Dual Eligible Medicare/Medicaid Beneficiaries
Utilization by Broad Categories of Service

	DUAL ELIGIBILITY	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	162,000	1,329,000		
Any Services	0.903	0.828	9.1%	(0.1%)
Total RVUs, All Services	946.000	746.000	26.8%	(0.4%)
Number of Services, Total	26.200	18.600	40.4%	(0.5%)
Any Non-Inpatient Services	0.895	0.822	9.0%	(0.1%)
Total RVUs, Non-Inpatient Services	509.000	420.000	21.3%	(0.4%)
Number of Non-Inpatient Services	18.100	13.500	33.9%	(0.4%)
Any Primary Care Services	0.847	0.748	13.2%	(0.1%)
Total RVUs, Primary Care Services	179.000	115.000	56.2%	(0.4%)
Number of Primary Care Services	6.850	4.370	56.7%	(0.5%)
Any Preventive Care Services	0.048	0.077	-37.8%	(0.9%)
Total RVUs, Preventive Care Services	1.650	3.010	-45.3%	(4.0%)
Number of Preventive Care Services	0.076	0.116	-34.1%	(11.0%)
Any Hi-Tech Services	0.266	0.251	6.3%	(0.6%)
Total RVUs, Hi-Tech Services	108.000	104.000	4.3%	(1.0%)
Number of Hi-Tech Services	0.616	0.551	11.9%	(0.5%)
Any OBRA89 Overvalued Procedures	0.436	0.392	11.3%	(0.5%)
Total RVUs, OBRA89 Overvalued Procedures	153.000	158.000	-3.3%	(0.7%)
Number of OBRA89 Overvalued Procedures	1.350	1.090	24.2%	(0.8%)
Any Services with General/Family Practitioner	0.504	0.352	43.5%	(0.3%)
Any Services with Internist	0.410	0.393	4.3%	(0.4%)
Any Services with Surgeon	0.503	0.512	-1.6%	(0.3%)
Any Services with Medical Specialist	0.543	0.477	13.7%	(0.2%)
Any Services with Group/Miscellaneous	0.504	0.434	16.1%	(0.4%)
Total RVUs with General/Family Practitioner	145.000	71.800	101.5%	(1.6%)
Total RVUs with Internist	170.000	130.000	30.9%	(1.0%)
Total RVUs with Surgeon	298.000	288.000	3.5%	(0.5%)
Total RVUs with Medical Specialist	224.000	180.000	24.2%	(0.7%)
Total RVUs with Group/Miscellaneous	117.000	81.400	44.1%	(0.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-18 (continued): Utilization Rates Per Beneficiary, 1986
Dual Eligible Medicare/Medicaid Beneficiaries
Utilization of Visits and Consultations

	DUAL ELIGIBILITY	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.847	0.748	13.2%	(0.1%)
Total RVUs, Primary Care Visits	181.000	115.000	57.0%	(0.9%)
Number of Primary Care Visits	6.850	4.370	56.7%	(0.5%)
Any Office Visits	0.689	0.690	-0.2%	(0.2%) NS
Total RVUs, Office Visits	126.000	96.500	30.5%	(0.9%)
Number of Office Visits	4.850	3.740	29.7%	(0.5%)
Any ER/OPD Visits	0.276	0.166	66.3%	(0.3%)
Total RVUs, ER/OPD Visits	20.300	9.870	105.6%	(2.5%)
Number of ER/OPD Visits	0.626	0.299	109.6%	(2.4%)
Any Consultations	0.225	0.174	29.5%	(0.8%)
Total RVUs, Consultations	44.400	30.000	48.4%	(1.3%)
Number of Consultations	0.633	0.420	50.5%	(1.4%)
Any Primary Care Visits, General/Family Practitioner	0.483	0.328	47.0%	(0.4%)
Any Primary Care Visits, Internist	0.311	0.326	-4.8%	(0.4%)
Any Primary Care Visits, Specialist	0.478	0.459	4.2%	(0.2%)
Total RVUs, Primary Care Visits, General/Family Practitioner	74.200	34.400	115.7%	(2.7%)
Total RVUs, Primary Care Visits, Internist	45.600	35.300	29.4%	(0.6%)
Total RVUs, Primary Care Visits, Specialist	61.100	45.600	34.2%	(0.6%)
Number of Primary Care Visits, General/Family Practitioner	2.890	1.350	114.0%	(1.5%)
Number of Primary Care Visits, Internist	1.730	1.340	29.1%	(0.5%)
Number of Primary Care Visits, Specialist	2.230	1.680	32.6%	(0.5%)
Any Consultations with General/Family Practitioner	0.011	0.007	55.0%	(5.4%)
Any Consultations with Internist	0.074	0.055	33.3%	(0.8%)
Any Consultations with Specialist	0.190	0.145	30.9%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	1.190	0.704	69.0%	(5.5%)
Total RVUs, Consultations with Internist	11.900	7.560	56.8%	(1.7%)
Total RVUs, Consultations with Specialist	31.400	21.700	44.8%	(1.5%)
Number of Consultations with General/Family Practitioner	0.018	0.010	69.7%	(8.6%)
Number of Consultations with Internist	0.170	0.104	63.4%	(2.6%)
Number of Consultations with Specialist	0.445	0.306	45.4%	(1.4%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-18 (continued): Utilization Rates Per Beneficiary, 1986
Dual Eligible Medicare/Medicaid Beneficiaries
Utilization of Cardiac Procedures and Selected Surgeries

	DUAL ELIGIBILITY	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.410	0.360	13.9%	(0.6%)
Any Cardiac Ultrasounds	0.050	0.042	20.2%	(1.5%)
Any Cardiac Catheterizations	0.013	0.014	-8.3%	(2.8%)
Any PCTAs	0.001	0.001	-29.8%	(6.1%)
Any CABGs	0.002	0.003	-48.3%	(3.0%)
Total RVUs, EKGs	29.500	25.400	16.0%	(0.8%)
Total RVUs, Cardiac Ultrasounds	8.220	6.960	18.0%	(2.4%)
Total RVUs, Cardiac Catheterizations	8.660	10.400	-16.8%	(2.3%)
Total RVUs, PCTAs	1.280	1.760	-27.2%	(7.1%)
Total RVUs, CABGs	6.470	12.500	-48.3%	(3.9%)
Number of EKGs	1.190	0.925	28.9%	(1.0%)
Number of Cardiac Ultrasounds	0.075	0.065	16.0%	(2.3%)
Number of Cardiac Catheterizations	0.019	0.021	-9.8%	(3.1%)
Number of PCTAs	0.001	0.001	-23.6%	(7.9%)
Number of CABGs	0.002	0.003	-47.8%	(3.7%)
Any Cataract Lens Surgeries	0.026	0.026	-2.9%	(2.1%) NS
Any Joint Prostheses	0.004	0.005	-14.7%	(4.3%)
Any Cholecystectomies	0.006	0.005	21.6%	(5.1%)
Any Hysterectomies	0.001	0.002	-21.1%	(4.9%)
Any TURPs	0.008	0.008	3.8%	(3.4%) NS
Total RVUs, Cataract Lens Surgeries	47.800	46.800	2.2%	(2.0%) NS
Total RVUs, Joint Prostheses	10.400	12.800	-19.0%	(4.4%)
Total RVUs, Cholecystectomies	5.390	4.430	21.7%	(5.4%)
Total RVUs, Hysterectomies	1.520	1.910	-20.5%	(4.7%)
Total RVUs, TURPs	9.500	9.190	3.4%	(3.3%) NS
Number of Cataract Lens Surgeries	0.031	0.030	1.8%	(2.0%) NS
Number of Joint Prostheses	0.005	0.006	-17.0%	(5.1%)
Number of Cholecystectomies	0.006	0.005	22.3%	(5.6%)
Number of Hysterectomies	0.001	0.002	-20.2%	(5.1%)
Number of TURPs	0.009	0.008	2.4%	(3.2%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-18 (continued): Utilization Rates Per Beneficiary, 1986
Dual Eligible Medicare/Medicaid Beneficiaries
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	DUAL ELIGIBILITY	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.041	0.059	-30.1%	(1.0%)
Any Upper GI Endoscopies	0.030	0.020	45.7%	(1.9%)
Any Other Endoscopies	0.039	0.036	9.0%	(2.2%)
Any Arthroscopies	0.001	0.001	-40.1%	(8.2%)
Total RVUs, Lower GI Endoscopies	11.600	14.800	-21.4%	(2.0%)
Total RVUs, Upper GI Endoscopies	12.200	8.230	48.5%	(2.9%)
Total RVUs, Other Endoscopies	12.100	10.800	11.6%	(2.8%)
Total RVUs, Arthroscopies	0.671	1.210	-44.4%	(7.5%)
Any Radiology Services	0.555	0.495	12.1%	(0.2%)
Any CAT Scans	0.103	0.082	25.8%	(1.2%)
Any MRIs	0.003	0.003	-14.7%	(3.3%)
Any Nuclear Imaging Services	0.064	0.060	7.3%	(2.0%)
Any Non-Cardiac Ultrasounds	0.096	0.078	23.5%	(0.9%)
Total RVUs, Radiology Services	102.000	88.500	15.3%	(0.8%)
Total RVUs, Cat Scans	16.900	14.200	19.6%	(1.1%)
Total RVUs, MRIs	1.040	1.300	-20.1%	(3.6%)
Total RVUs, Nuclear Imaging Services	6.740	6.680	0.9%	(2.2%) NS
Total RVUs, Non-Cardiac Ultrasounds	10.200	8.320	23.0%	(1.1%)
Any Mammograms	0.024	0.047	-47.7%	(0.8%)
Any Pap Smears	0.020	0.028	-29.1%	(1.0%)
Any Pneumonia Vaccines	0.008	0.011	-28.8%	(1.8%)
Any Influenza Vaccines	0.000	0.000	-74.9%	(10.2%)
Total RVUs, Mammograms	1.190	2.400	-50.6%	(0.8%)
Total RVUs, Pap Smears	0.179	0.249	-28.2%	(1.2%)
Total RVUs, Pneumonia Vaccines	0.279	0.351	-20.5%	(49.4%) NS
Total RVUs, Influenza Vaccines	0.001	0.003	-77.6%	(8.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-18 (continued): Utilization Rates Per Beneficiary, 1986
Dual Eligible Medicare/Medicaid Beneficiaries
Hospital Outpatient and Inpatient Services and Mortality Rate**

	DUAL ELIGIBILITY	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.293	0.160	83.3%	(0.4%)
Number of Visits/ER Services	1.050	0.394	165.5%	(2.1%)
Charges, Visits/ER Services	50.900	18.000	182.9%	(3.3%)
Charges, All Services	556.000	283.000	96.6%	(2.7%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.068	0.022	210.7%	(3.7%)
Number of Visits/ER Services	0.319	0.077	312.3%	(8.1%)
Charges, Visits/ER Services	16.700	3.680	353.6%	(14.7%)
Charges, All Services	67.600	23.400	188.7%	(6.2%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.044	0.010	330.7%	(5.3%)
Number of Visits/ER Services	0.225	0.041	444.1%	(8.0%)
Charges, Visits/ER Services	10.700	1.560	581.9%	(19.4%)
Charges, All Services	42.200	10.500	302.0%	(15.5%)
Inpatient Services, Any Hospital				
Discharges, Total	0.536	0.322	66.6%	(1.3%)
Discharges, ACS DRGs	0.138	0.065	113.4%	(2.2%)
Discharges, Low Variation DRGs	0.019	0.016	17.0%	(3.2%)
Admitted Through ER	0.233	0.124	88.8%	(1.9%)
Outlier, Day or Cost	0.021	0.011	92.8%	(6.7%)
Discharged Dead	0.035	0.021	69.0%	(1.5%)
All Deaths				
Mortality Rate	0.073	0.045	62.5%	(1.0%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-19: Utilization Rates Per Beneficiary, 1986
Beneficiaries Over Age 85
Utilization by Broad Categories of Service

	85 OR OVER	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	124,000	1,367,000		
Any Services	0.943	0.827	14.0%	(0.2%)
Total RVUs, All Services	865.000	758.000	14.1%	(0.3%)
Number of Services, Total	24.200	19.000	27.3%	(0.6%)
Any Non-Inpatient Services	0.931	0.821	13.4%	(0.2%)
Total RVUs, Non-Inpatient Services	452.000	428.000	5.7%	(0.5%)
Number of Non-Inpatient Services	16.000	13.800	15.9%	(0.6%)
Any Primary Care Services	0.862	0.750	14.9%	(0.2%)
Total RVUs, Primary Care Services	153.000	119.000	28.6%	(0.4%)
Number of Primary Care Services	5.790	4.520	28.1%	(0.4%)
Any Preventive Care Services	0.030	0.078	-62.1%	(0.3%)
Total RVUs, Preventive Care Services	1.030	3.010	-65.8%	(4.0%)
Number of Preventive Care Services	0.060	0.116	-47.9%	(10.1%)
Any Hi-Tech Services	0.255	0.252	1.3%	(0.5%)
Total RVUs, Hi-Tech Services	91.500	105.000	-13.1%	(0.7%)
Number of Hi-Tech Services	0.524	0.560	-6.4%	(1.2%)
Any OBRA89 Overvalued Procedures	0.459	0.391	17.5%	(0.3%)
Total RVUs, OBRA89 Overvalued Procedures	152.000	158.000	-3.7%	(0.9%)
Number of OBRA89 Overvalued Procedures	1.310	1.100	19.7%	(0.7%)
Any Services with General/Family Practitioner	0.464	0.359	29.1%	(0.3%)
Any Services with Internist	0.470	0.388	21.1%	(0.3%)
Any Services with Surgeon	0.589	0.504	16.7%	(0.2%)
Any Services with Medical Specialist	0.549	0.478	14.7%	(0.3%)
Any Services with Group/Miscellaneous	0.543	0.433	25.4%	(0.4%)
Total RVUs with General/Family Practitioner	123.000	75.300	63.6%	(1.3%)
Total RVUs with Internist	164.000	131.000	25.4%	(1.0%)
Total RVUs with Surgeon	314.000	286.000	9.6%	(0.9%)
Total RVUs with Medical Specialist	158.000	188.000	-16.0%	(0.8%)
Total RVUs with Group/Miscellaneous	107.000	83.200	28.9%	(1.3%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-19 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Over Age 85
Utilization of Visits and Consultations**

	85 OR OVER	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.862	0.750	14.9%	(0.2%)
Total RVUs, Primary Care Visits	153.000	119.000	28.6%	(0.5%)
Number of Primary Care Visits	5.790	4.520	28.1%	(0.4%)
Any Office Visits	0.621	0.697	-10.8%	(0.2%)
Total RVUs, Office Visits	83.100	101.000	-17.5%	(0.4%)
Number of Office Visits	3.270	3.900	-16.3%	(0.3%)
Any ER/OPD Visits	0.258	0.170	51.9%	(1.0%)
Total RVUs, ER/OPD Visits	15.800	10.500	50.4%	(1.6%)
Number of ER/OPD Visits	0.442	0.322	37.4%	(1.2%)
Any Consultations	0.237	0.173	36.6%	(0.6%)
Total RVUs, Consultations	40.000	30.700	30.5%	(0.8%)
Number of Consultations	0.566	0.431	31.2%	(1.1%)
Any Primary Care Visits, General/Family Practitioner	0.430	0.337	27.6%	(0.4%)
Any Primary Care Visits, Internist	0.364	0.321	13.2%	(0.4%)
Any Primary Care Visits, Specialist	0.479	0.460	4.2%	(0.3%)
Total RVUs, Primary Care Visits, General/Family Practitioner	57.300	36.800	55.6%	(1.0%)
Total RVUs, Primary Care Visits, Internist	46.000	35.500	29.8%	(0.8%)
Total RVUs, Primary Care Visits, Specialist	50.000	47.000	6.5%	(0.7%)
Number of Primary Care Visits, General/Family Practitioner	2.210	1.450	52.3%	(0.9%)
Number of Primary Care Visits, Internist	1.750	1.350	29.7%	(0.7%)
Number of Primary Care Visits, Specialist	1.840	1.730	6.5%	(0.6%)
Any Consultations with General/Family Practitioner	0.011	0.007	51.7%	(3.7%)
Any Consultations with Internist	0.072	0.056	29.9%	(1.5%)
Any Consultations with Specialist	0.199	0.145	36.9%	(0.8%)
Total RVUs, Consultations with General/Family Practitioner	1.100	0.726	51.1%	(6.0%)
Total RVUs, Consultations with Internist	9.970	7.830	27.4%	(1.5%)
Total RVUs, Consultations with Specialist	29.000	22.100	31.0%	(1.0%)
Number of Consultations with General/Family Practitioner	0.016	0.011	49.5%	(7.5%)
Number of Consultations with Internist	0.139	0.108	28.4%	(1.8%)
Number of Consultations with Specialist	0.410	0.312	31.5%	(1.4%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-19 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Over Age 85
Utilization of Cardiac Procedures and Selected Surgeries

	85 OR OVER	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.437	0.358	21.9%	(0.4%)
Any Cardiac Ultrasounds	0.044	0.042	2.8%	(1.4%) NS
Any Cardiac Catheterizations	0.006	0.015	-63.1%	(1.3%)
Any PCTAs	0.000	0.001	-89.8%	(2.3%)
Any CABGs	0.000	0.003	-94.7%	(1.0%)
Total RVUs, EKGs	25.700	25.900	-0.7%	(0.7%) NS
Total RVUs, Cardiac Ultrasounds	6.310	7.160	-11.9%	(1.4%)
Total RVUs, Cardiac Catheterizations	2.390	11.000	-78.2%	(0.6%)
Total RVUs, PCTAs	0.168	1.870	-91.0%	(2.2%)
Total RVUs, CABGs	0.714	13.100	-94.6%	(1.0%)
Number of EKGs	1.170	0.931	25.3%	(0.8%)
Number of Cardiac Ultrasounds	0.063	0.066	-3.7%	(1.3%)
Number of Cardiac Catheterizations	0.007	0.022	-65.7%	(1.6%)
Number of PCTAs	0.000	0.001	-90.8%	(2.5%)
Number of CABGs	0.000	0.003	-94.4%	(1.0%)
Any Cataract Lens Surgeries	0.036	0.025	43.5%	(2.2%)
Any Joint Prostheses	0.005	0.005	4.3%	(3.7%) NS
Any Cholecystectomies	0.004	0.005	-19.0%	(4.5%)
Any Hysterectomies	0.001	0.002	-62.2%	(4.8%)
Any TURPs	0.008	0.008	2.2%	(3.6%) NS
Total RVUs, Cataract Lens Surgeries	63.500	45.100	40.6%	(2.2%)
Total RVUs, Joint Prostheses	11.800	12.600	-5.8%	(4.1%) NS
Total RVUs, Cholecystectomies	3.830	4.600	-16.6%	(5.3%)
Total RVUs, Hysterectomies	0.740	1.970	-62.3%	(5.6%)
Total RVUs, TURPs	9.320	9.190	1.4%	(3.6%) NS
Number of Cataract Lens Surgeries	0.041	0.029	40.4%	(2.1%)
Number of Joint Prostheses	0.006	0.006	-1.4%	(4.6%) NS
Number of Cholecystectomies	0.004	0.005	-18.6%	(4.7%)
Number of Hysterectomies	0.001	0.002	-62.0%	(5.0%)
Number of TURPs	0.008	0.008	0.7%	(3.6%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-19 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Over Age 85
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	85 OR OVER	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.040	0.059	-32.0%	(0.9%)
Any Upper GI Endoscopies	0.024	0.021	11.3%	(3.0%)
Any Other Endoscopies	0.032	0.036	-12.7%	(1.1%)
Any Arthroscopies	0.000	0.001	-83.2%	(3.8%)
Total RVUs, Lower GI Endoscopies	10.200	14.900	-31.8%	(1.4%)
Total RVUs, Upper GI Endoscopies	9.290	8.550	8.7%	(4.8%) NS
Total RVUs, Other Endoscopies	9.680	11.000	-12.3%	(2.0%)
Total RVUs, Arthroscopies	0.224	1.250	-82.1%	(4.2%)
Any Radiology Services	0.575	0.495	16.2%	(0.4%)
Any CAT Scans	0.097	0.083	16.8%	(1.1%)
Any MRIs	0.001	0.003	-68.8%	(2.7%)
Any Nuclear Imaging Services	0.056	0.061	-7.6%	(1.2%)
Any Non-Cardiac Ultrasounds	0.090	0.078	14.8%	(1.1%)
Total RVUs, Radiology Services	84.300	90.200	-6.5%	(0.7%)
Total RVUs, Cat Scans	13.400	14.500	-7.8%	(1.3%)
Total RVUs, MRIs	0.348	1.350	-74.2%	(3.1%)
Total RVUs, Nuclear Imaging Services	5.270	6.810	-22.6%	(3.4%)
Total RVUs, Non-Cardiac Ultrasounds	9.680	8.390	15.5%	(1.9%)
Any Mammograms	0.011	0.047	-75.8%	(0.5%)
Any Pap Smears	0.011	0.028	-61.9%	(0.7%)
Any Pneumonia Vaccines	0.008	0.011	-24.7%	(3.6%)
Any Influenza Vaccines	0.000	0.000	-25.7%	(19.1%) NS
Total RVUs, Mammograms	0.575	2.420	-76.3%	(0.6%)
Total RVUs, Pap Smears	0.096	0.254	-62.2%	(0.6%)
Total RVUs, Pneumonia Vaccines	0.358	0.336	6.4%	(33.2%) NS
Total RVUs, Influenza Vaccines	0.002	0.002	-31.4%	(18.0%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-19 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries Over Age 85
Hospital Outpatient and Inpatient Services and Mortality Rate

	85 OR OVER	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.205	0.170	20.1%	(0.6%)
Number of Visits/ER Services	0.459	0.460	-0.3%	(1.2%) NS
Charges, Visits/ER Services	22.200	21.200	4.5%	(1.6%)
Charges, All Services	277.000	314.000	-11.5%	(1.2%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.024	0.027	-12.2%	(1.7%)
Number of Visits/ER Services	0.069	0.104	-33.4%	(2.7%)
Charges, Visits/ER Services	3.610	5.090	-29.0%	(3.1%)
Charges, All Services	20.300	28.600	-29.0%	(1.6%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.010	0.014	-25.4%	(2.8%)
Number of Visits/ER Services	0.035	0.062	-43.8%	(3.6%)
Charges, Visits/ER Services	1.440	2.570	-43.7%	(4.1%)
Charges, All Services	7.890	14.300	-44.7%	(3.2%)
Inpatient Services, Any Hospital				
Discharges, Total	0.512	0.325	57.8%	(0.6%)
Discharges, ACS DRGs	0.124	0.066	88.8%	(2.1%)
Discharges, Low Variation DRGs	0.025	0.016	61.3%	(3.6%)
Admitted Through ER	0.246	0.123	100.3%	(1.2%)
Outlier, Day or Cost	0.019	0.011	71.8%	(4.7%)
Discharged Dead	0.057	0.019	205.4%	(2.3%)
All Deaths				
Mortality Rate	0.149	0.039	281.9%	(2.4%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Outpatient information on this table reflects facility bills, not physician bills.

Table B-20: Utilization Rates Per Beneficiary, 1986
Disabled Beneficiaries
Utilization by Broad Categories of Service

	DISABLED	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	213,000	1,278,000		
Any Services	0.873	0.851	2.5%	(1.5%) NS
Total RVUs, All Services	1010.000	851.000	18.6%	(2.6%)
Number of Services, Total	26.100	21.200	23.1%	(3.0%)
Any Non-Inpatient Services	0.861	0.845	2.0%	(0.4%)
Total RVUs, Non-Inpatient Services	522.000	483.000	8.1%	(5.0%) NS
Number of Non-Inpatient Services	17.700	15.500	14.0%	(4.3%)
Any Primary Care Services	0.805	0.765	5.3%	(0.5%)
Total RVUs, Primary Care Services	160.000	118.000	34.8%	(3.8%)
Number of Primary Care Services	6.160	4.500	37.0%	(4.7%)
Any Preventive Care Services	0.065	0.076	-14.8%	(1.6%)
Total RVUs, Preventive Care Services	2.420	2.930	-17.4%	(6.3%)
Number of Preventive Care Services	0.107	0.113	-5.3%	(16.1%) NS
Any Hi-Tech Services	0.304	0.259	17.2%	(2.0%)
Total RVUs, Hi-Tech Services	131.000	118.000	11.1%	(2.5%)
Number of Hi-Tech Services	0.718	0.587	22.3%	(2.3%)
Any OBRA89 Overvalued Procedures	0.463	0.403	15.0%	(3.1%)
Total RVUs, OBRA89 Overvalued Procedures	193.000	161.000	20.2%	(6.5%)
Number of OBRA89 Overvalued Procedures	1.550	1.120	38.1%	(1.1%)
Any Services with General/Family Practitioner	0.414	0.359	15.2%	(1.5%)
Any Services with Internist	0.454	0.400	13.5%	(3.4%)
Any Services with Surgeon	0.535	0.525	2.0%	(0.8%)
Any Services with Medical Specialist	0.563	0.490	15.0%	(1.1%)
Any Services with Group/Miscellaneous	0.477	0.450	5.9%	(1.1%)
Total RVUs with General/Family Practitioner	106.000	74.400	42.8%	(2.0%)
Total RVUs with Internist	186.000	156.000	19.7%	(6.6%)
Total RVUs with Surgeon	351.000	313.000	12.4%	(4.7%)
Total RVUs with Medical Specialist	263.000	225.000	16.7%	(4.2%)
Total RVUs with Group/Miscellaneous	108.000	98.300	9.8%	(1.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-20 (continued): Utilization Rates Per Beneficiary, 1986
Disabled Beneficiaries
Utilization of Visits and Consultations

	DISABLED	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.805	0.765	5.3%	(0.5%)
Total RVUs, Primary Care Visits	161.000	119.000	35.4%	(3.8%)
Number of Primary Care Visits	6.160	4.500	37.0%	(4.7%)
Any Office Visits	0.716	0.700	2.3%	(0.5%)
Total RVUs, Office Visits	127.000	97.700	29.8%	(4.9%)
Number of Office Visits	4.990	3.780	32.1%	(5.9%)
Any ER/OPD Visits	0.245	0.171	43.4%	(1.3%)
Total RVUs, ER/OPD Visits	17.400	10.600	64.3%	(3.0%)
Number of ER/OPD Visits	0.530	0.323	64.2%	(2.9%)
Any Consultations	0.240	0.182	31.8%	(2.7%)
Total RVUs, Consultations	47.900	33.500	43.0%	(4.3%)
Number of Consultations	0.677	0.481	40.7%	(4.3%)
Any Primary Care Visits, General/Family Practitioner	0.388	0.336	15.4%	(1.6%)
Any Primary Care Visits, Internist	0.361	0.325	11.2%	(1.9%)
Any Primary Care Visits, Specialist	0.509	0.467	9.0%	(0.9%)
Total RVUs, Primary Care Visits, General/Family Practitioner	50.400	36.000	39.9%	(1.6%)
Total RVUs, Primary Care Visits, Internist	46.300	35.300	31.3%	(2.1%)
Total RVUs, Primary Care Visits, Specialist	64.200	47.600	35.0%	(8.2%)
Number of Primary Care Visits, General/Family Practitioner	1.950	1.410	38.0%	(1.2%)
Number of Primary Care Visits, Internist	1.790	1.330	34.4%	(2.8%)
Number of Primary Care Visits, Specialist	2.420	1.750	38.1%	(10.4%)
Any Consultations with General/Family Practitioner	0.010	0.007	36.3%	(7.7%)
Any Consultations with Internist	0.079	0.059	35.5%	(2.1%)
Any Consultations with Specialist	0.203	0.153	33.0%	(3.4%)
Total RVUs, Consultations with General/Family Practitioner	1.110	0.767	44.6%	(12.3%)
Total RVUs, Consultations with Internist	11.900	8.850	34.5%	(6.1%)
Total RVUs, Consultations with Specialist	34.900	23.900	46.1%	(5.4%)
Number of Consultations with General/Family Practitioner	0.017	0.012	37.5%	(15.0%)
Number of Consultations with Internist	0.164	0.126	29.9%	(7.0%)
Number of Consultations with Specialist	0.496	0.343	44.7%	(5.3%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-20 (continued): Utilization Rates Per Beneficiary, 1986
Disabled Beneficiaries
Utilization of Cardiac Procedures and Selected Surgeries

	DISABLED	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.433	0.368	17.7%	(3.5%)
Any Cardiac Ultrasounds	0.059	0.045	33.3%	(4.8%)
Any Cardiac Catheterizations	0.022	0.014	53.4%	(4.0%)
Any PCTAs	0.001	0.001	1.0%	(5.9%) NS
Any CABGs	0.004	0.003	39.7%	(9.9%)
Total RVUs, EKGs	33.700	25.500	32.3%	(1.2%)
Total RVUs, Cardiac Ultrasounds	10.200	7.490	36.7%	(6.6%)
Total RVUs, Cardiac Catheterizations	15.900	10.400	52.9%	(4.6%)
Total RVUs, PCTAs	1.800	1.890	-4.8%	(6.4%) NS
Total RVUs, CABGs	16.900	11.700	44.0%	(10.2%)
Number of EKGs	1.350	0.941	43.8%	(0.8%)
Number of Cardiac Ultrasounds	0.097	0.070	38.7%	(7.8%)
Number of Cardiac Catheterizations	0.033	0.020	59.0%	(5.9%)
Number of PCTAs	0.001	0.001	-2.7%	(6.4%) NS
Number of CABGs	0.004	0.003	42.2%	(10.0%)
Any Cataract Lens Surgeries	0.032	0.027	20.8%	(23.5%) NS
Any Joint Prostheses	0.008	0.005	54.9%	(7.5%)
Any Cholecystectomies	0.006	0.005	21.4%	(7.0%)
Any Hysterectomies	0.002	0.002	-9.4%	(9.9%) NS
Any TURPs	0.008	0.008	-4.3%	(3.5%) NS
Total RVUs, Cataract Lens Surgeries	56.500	47.700	18.6%	(21.2%) NS
Total RVUs, Joint Prostheses	19.500	12.600	54.0%	(7.1%)
Total RVUs, Cholecystectomies	5.520	4.570	20.7%	(7.0%)
Total RVUs, Hysterectomies	1.680	1.860	-9.5%	(11.7%) NS
Total RVUs, TURPs	8.910	9.400	-5.2%	(3.4%) NS
Number of Cataract Lens Surgeries	0.037	0.031	18.6%	(20.6%) NS
Number of Joint Prostheses	0.009	0.006	59.6%	(6.4%)
Number of Cholecystectomies	0.006	0.005	20.1%	(6.8%)
Number of Hysterectomies	0.002	0.002	-7.3%	(12.3%) NS
Number of TURPs	0.008	0.009	-6.0%	(3.3%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-20 (continued): Utilization Rates Per Beneficiary, 1986
Disabled Beneficiaries
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services

	DISABLED	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.057	0.059	-4.1%	(3.0%) NS
Any Upper GI Endoscopies	0.032	0.021	47.8%	(7.0%)
Any Other Endoscopies	0.044	0.036	19.3%	(2.7%)
Any Arthroscopies	0.001	0.001	-12.8%	(8.8%) NS
Total RVUs, Lower GI Endoscopies	15.600	14.900	5.2%	(3.6%) NS
Total RVUs, Upper GI Endoscopies	12.800	8.680	47.0%	(8.3%)
Total RVUs, Other Endoscopies	13.700	11.000	24.5%	(2.8%)
Total RVUs, Arthroscopies	1.050	1.240	-15.7%	(9.5%) NS
Any Radiology Services	0.572	0.507	12.8%	(0.9%)
Any CAT Scans	0.112	0.083	33.6%	(2.0%)
Any MRIs	0.004	0.003	44.0%	(12.5%)
Any Nuclear Imaging Services	0.080	0.067	20.2%	(2.9%)
Any Non-Cardiac Ultrasounds	0.101	0.086	17.5%	(7.2%)
Total RVUs, Radiology Services	113.000	93.500	21.4%	(2.4%)
Total RVUs, Cat Scans	18.700	14.400	29.7%	(2.9%)
Total RVUs, MRIs	2.000	1.210	65.8%	(21.5%)
Total RVUs, Nuclear Imaging Services	9.000	8.400	7.2%	(4.3%) NS
Total RVUs, Non-Cardiac Ultrasounds	10.500	9.510	10.1%	(7.6%) NS
Any Mammograms	0.037	0.046	-19.8%	(2.9%)
Any Pap Smears	0.023	0.027	-18.0%	(1.9%)
Any Pneumonia Vaccines	0.012	0.011	4.0%	(6.2%) NS
Any Influenza Vaccines	0.000	0.000	-53.7%	(5.5%)
Total RVUs, Mammograms	1.790	2.340	-23.7%	(2.1%)
Total RVUs, Pap Smears	0.202	0.248	-18.7%	(2.2%)
Total RVUs, Pneumonia Vaccines	0.428	0.336	27.6%	(53.0%) NS
Total RVUs, Influenza Vaccines	0.001	0.003	-52.4%	(7.9%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-20 (continued): Utilization Rates Per Beneficiary, 1986
Disabled Beneficiaries
Hospital Outpatient and Inpatient Services and Mortality Rate**

	DISABLED	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.239	0.169	41.4%	(1.2%)
Number of Visits/ER Services	0.758	0.445	70.4%	(1.2%)
Charges, Visits/ER Services	34.600	20.800	66.8%	(2.8%)
Charges, All Services	376.000	635.000	-40.8%	(2.7%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.044	0.026	72.1%	(3.2%)
Number of Visits/ER Services	0.199	0.096	106.5%	(6.0%)
Charges, Visits/ER Services	9.050	4.580	97.6%	(8.4%)
Charges, All Services	38.300	49.000	-21.8%	(4.9%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.026	0.013	95.8%	(5.6%)
Number of Visits/ER Services	0.133	0.056	136.6%	(7.2%)
Charges, Visits/ER Services	5.160	2.290	125.1%	(13.2%)
Charges, All Services	20.300	30.600	-33.7%	(5.9%)
Inpatient Services, Any Hospital				
Discharges, Total	0.513	0.353	45.3%	(3.3%)
Discharges, ACS DRGs	0.129	0.066	96.5%	(3.4%)
Discharges, Low Variation DRGs	0.021	0.016	29.6%	(6.2%)
Admitted Through ER	0.211	0.131	60.9%	(2.6%)
Outlier, Day or Cost	0.023	0.012	87.1%	(105.1%) NS
Discharged Dead	0.032	0.021	47.5%	(64.3%) NS
All Deaths				
Mortality Rate	0.061	0.046	31.2%	(5.0%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-21: Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Losses Under the Fee Schedule
Utilization by Broad Categories of Service

	BIG LOSSES	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	217,000	1,274,000		
Any Services	0.857	0.833	2.9%	(0.1%)
Total RVUs, All Services	902.000	744.000	21.3%	(0.4%)
Number of Services, Total	22.300	18.900	17.5%	(0.3%)
Any Non-Inpatient Services	0.852	0.826	3.1%	(0.1%)
Total RVUs, Non-Inpatient Services	556.000	408.000	36.3%	(0.4%)
Number of Non-Inpatient Services	17.200	13.400	28.0%	(0.3%)
Any Primary Care Services	0.781	0.755	3.4%	(0.1%)
Total RVUs, Primary Care Services	145.000	118.000	23.5%	(0.4%)
Number of Primary Care Services	5.290	4.520	17.1%	(0.3%)
Any Preventive Care Services	0.085	0.072	17.1%	(0.8%)
Total RVUs, Preventive Care Services	3.270	2.780	17.5%	(2.0%)
Number of Preventive Care Services	0.107	0.112	-4.8%	(3.6%) NS
Any Hi-Tech Services	0.277	0.248	11.9%	(0.3%)
Total RVUs, Hi-Tech Services	119.000	102.000	17.4%	(0.8%)
Number of Hi-Tech Services	0.633	0.544	16.5%	(0.6%)
Any OBRA89 Overvalued Procedures	0.437	0.389	12.3%	(0.2%)
Total RVUs, OBRA89 Overvalued Procedures	188.000	152.000	24.0%	(1.2%)
Number of OBRA89 Overvalued Procedures	1.200	1.100	9.2%	(0.6%)
Any Services with General/Family Practitioner	0.373	0.367	1.6%	(0.3%)
Any Services with Internist	0.412	0.392	5.3%	(0.3%)
Any Services with Surgeon	0.575	0.501	14.9%	(0.3%)
Any Services with Medical Specialist	0.510	0.480	6.4%	(0.2%)
Any Services with Group/Miscellaneous	0.497	0.432	15.0%	(0.3%)
Total RVUs with General/Family Practitioner	82.100	78.800	4.2%	(0.6%)
Total RVUs with Internist	148.000	131.000	12.4%	(0.7%)
Total RVUs with Surgeon	333.000	281.000	18.6%	(0.7%)
Total RVUs with Medical Specialist	239.000	176.000	35.9%	(0.8%)
Total RVUs with Group/Miscellaneous	108.000	81.300	33.1%	(1.3%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-21 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Losses Under the Fee Schedule
Utilization of Visits and Consultations

	BIG LOSSES	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.781	0.755	3.4%	(0.1%)
Total RVUs, Primary Care Visits	146.000	118.000	23.5%	(0.4%)
Number of Primary Care Visits	5.290	4.520	17.1%	(0.3%)
Any Office Visits	0.726	0.684	6.1%	(0.1%)
Total RVUs, Office Visits	125.000	95.100	31.3%	(0.4%)
Number of Office Visits	4.590	3.730	23.0%	(0.4%)
Any ER/OPD Visits	0.159	0.180	-11.4%	(0.4%)
Total RVUs, ER/OPD Visits	9.550	11.200	-14.4%	(0.8%)
Number of ER/OPD Visits	0.275	0.341	-19.2%	(0.7%)
Any Consultations	0.221	0.171	29.3%	(0.5%)
Total RVUs, Consultations	45.600	29.000	57.1%	(0.8%)
Number of Consultations	0.638	0.409	55.9%	(0.7%)
Any Primary Care Visits, General/Family Practitioner	0.348	0.344	1.0%	(0.3%)
Any Primary Care Visits, Internist	0.339	0.322	5.3%	(0.5%)
Any Primary Care Visits, Specialist	0.513	0.453	13.3%	(0.2%)
Total RVUs, Primary Care Visits, General/Family Practitioner	40.800	38.100	7.2%	(0.5%)
Total RVUs, Primary Care Visits, Internist	42.500	35.300	20.4%	(0.9%)
Total RVUs, Primary Care Visits, Specialist	62.400	44.700	39.8%	(0.3%)
Number of Primary Care Visits, General/Family Practitioner	1.530	1.510	1.1%	(0.5%)
Number of Primary Care Visits, Internist	1.530	1.350	13.2%	(0.9%)
Number of Primary Care Visits, Specialist	2.230	1.650	35.0%	(0.3%)
Any Consultations with General/Family Practitioner	0.011	0.007	74.0%	(3.3%)
Any Consultations with Internist	0.069	0.055	24.6%	(0.8%)
Any Consultations with Specialist	0.190	0.143	33.1%	(0.6%)
Total RVUs, Consultations with General/Family Practitioner	1.280	0.669	91.5%	(5.1%)
Total RVUs, Consultations with Internist	11.600	7.390	57.5%	(1.2%)
Total RVUs, Consultations with Specialist	32.700	21.000	55.8%	(0.8%)
Number of Consultations with General/Family Practitioner	0.018	0.010	75.4%	(4.4%)
Number of Consultations with Internist	0.164	0.102	61.2%	(1.6%)
Number of Consultations with Specialist	0.456	0.297	53.5%	(0.8%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

Table B-21 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Losses Under the Fee Schedule
Utilization of Cardiac Procedures and Selected Surgeries

	BIG LOSSES	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.396	0.359	10.3%	(0.2%)
Any Cardiac Ultrasounds	0.046	0.042	10.4%	(1.8%)
Any Cardiac Catheterizations	0.017	0.014	20.0%	(1.7%)
Any PCTAs	0.001	0.001	-8.8%	(8.8%) NS
Any CABGs	0.003	0.003	9.8%	(3.6%)
Total RVUs, EKGs	30.500	25.100	21.8%	(0.8%)
Total RVUs, Cardiac Ultrasounds	7.970	6.940	14.9%	(1.9%)
Total RVUs, Cardiac Catheterizations	12.000	10.000	19.9%	(1.6%)
Total RVUs, PCTAs	1.590	1.750	-9.2%	(10.4%) NS
Total RVUs, CABGs	13.000	11.900	8.7%	(3.7%)
Number of EKGs	0.993	0.943	5.3%	(0.6%)
Number of Cardiac Ultrasounds	0.064	0.066	-3.1%	(1.5%)
Number of Cardiac Catheterizations	0.024	0.020	19.7%	(1.5%)
Number of PCTAs	0.001	0.001	-9.8%	(10.1%) NS
Number of CABGs	0.003	0.003	9.9%	(3.8%)
Any Cataract Lens Surgeries	0.034	0.025	36.2%	(2.4%)
Any Joint Prostheses	0.005	0.005	4.0%	(2.1%) NS
Any Cholecystectomies	0.005	0.005	-4.1%	(4.0%) NS
Any Hysterectomies	0.002	0.002	1.9%	(5.0%) NS
Any TURPs	0.008	0.008	1.9%	(2.4%) NS
Total RVUs, Cataract Lens Surgeries	62.200	44.000	41.4%	(2.7%)
Total RVUs, Joint Prostheses	13.000	12.400	4.5%	(2.1%)
Total RVUs, Cholecystectomies	4.290	4.570	-6.2%	(4.3%) NS
Total RVUs, Hysterectomies	1.900	1.860	2.0%	(5.4%) NS
Total RVUs, TURPs	9.490	9.150	3.7%	(2.3%) NS
Number of Cataract Lens Surgeries	0.040	0.029	39.7%	(2.7%)
Number of Joint Prostheses	0.006	0.006	6.9%	(3.5%) NS
Number of Cholecystectomies	0.005	0.005	-3.6%	(3.9%) NS
Number of Hysterectomies	0.002	0.002	3.8%	(4.9%) NS
Number of TURPs	0.009	0.008	2.7%	(2.2%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-21 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Losses Under the Fee Schedule
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	BIG LOSSES	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.067	0.056	19.3%	(0.7%)
Any Upper GI Endoscopies	0.024	0.021	13.0%	(2.0%)
Any Other Endoscopies	0.040	0.035	14.4%	(0.8%)
Any Arthroscopies	0.002	0.001	45.9%	(6.5%)
Total RVUs, Lower GI Endoscopies	17.100	14.100	21.3%	(1.2%)
Total RVUs, Upper GI Endoscopies	9.600	8.440	13.8%	(3.0%)
Total RVUs, Other Endoscopies	12.300	10.700	15.3%	(1.3%)
Total RVUs, Arthroscopies	1.550	1.100	41.4%	(9.9%)
Any Radiology Services	0.536	0.495	8.3%	(0.1%)
Any CAT Scans	0.090	0.083	9.1%	(0.8%)
Any MRIs	0.005	0.003	92.1%	(6.7%)
Any Nuclear Imaging Services	0.064	0.060	7.0%	(1.0%)
Any Non-Cardiac Ultrasounds	0.087	0.078	11.4%	(0.7%)
Total RVUs, Radiology Services	106.000	87.000	21.8%	(0.6%)
Total RVUs, Cat Scans	17.200	13.900	23.5%	(1.1%)
Total RVUs, MRIs	2.090	1.130	85.0%	(9.6%)
Total RVUs, Nuclear Imaging Services	8.000	6.460	23.7%	(1.1%)
Total RVUs, Non-Cardiac Ultrasounds	10.000	8.230	21.7%	(0.8%)
Any Mammograms	0.047	0.044	8.6%	(0.8%)
Any Pap Smears	0.037	0.025	49.2%	(1.8%)
Any Pneumonia Vaccines	0.011	0.011	0.1%	(2.0%) NS
Any Influenza Vaccines	0.000	0.000	-36.0%	(13.0%)
Total RVUs, Mammograms	2.780	2.180	27.5%	(1.0%)
Total RVUs, Pap Smears	0.344	0.224	53.6%	(2.2%)
Total RVUs, Pneumonia Vaccines	0.139	0.372	-62.7%	(5.9%)
Total RVUs, Influenza Vaccines	0.002	0.003	-32.8%	(9.1%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-21 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Losses Under the Fee Schedule
Hospital Outpatient and Inpatient Services and Mortality Rate**

	BIG LOSSES	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.152	0.177	-13.8%	(0.4%)
Number of Visits/ER Services	0.422	0.466	-9.5%	(1.1%)
Charges, Visits/ER Services	24.900	20.700	19.9%	(2.4%)
Charges, All Services	365.000	302.000	20.8%	(1.2%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.033	0.026	27.3%	(2.4%)
Number of Visits/ER Services	0.135	0.096	40.7%	(3.5%)
Charges, Visits/ER Services	8.630	4.360	97.8%	(7.5%)
Charges, All Services	36.900	26.400	39.7%	(4.4%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.019	0.013	51.7%	(2.5%)
Number of Visits/ER Services	0.089	0.055	61.7%	(4.4%)
Charges, Visits/ER Services	5.200	2.030	155.7%	(9.8%)
Charges, All Services	18.400	13.000	41.8%	(7.6%)
Inpatient Services, Any Hospital				
Discharges, Total	0.329	0.342	-3.8%	(0.4%)
Discharges, ACS DRGs	0.065	0.072	-8.6%	(0.8%)
Discharges, Low Variation DRGs	0.014	0.017	-17.8%	(1.9%)
Admitted Through ER	0.122	0.135	-9.3%	(0.7%)
Outlier, Day or Cost	0.014	0.011	28.5%	(2.8%)
Discharged Dead	0.021	0.022	-6.1%	(1.5%)
All Deaths				
Mortality Rate	0.045	0.049	-7.9%	(0.8%)

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

Table B-22: Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Gains Under the Fee Schedule
Utilization by Broad Categories of Service

	BIG GAINS	OTHER	DIFFERENCE	(S.E.)
Number of Beneficiaries	224,000	1,267,000		
Any Services	0.818	0.840	-2.6%	(0.1%)
Total RVUs, All Services	656.000	786.000	-16.6%	(0.3%)
Number of Services, Total	17.000	19.900	-14.4%	(0.3%)
Any Non-Inpatient Services	0.811	0.833	-2.6%	(0.1%)
Total RVUs, Non-Inpatient Services	357.000	443.000	-19.4%	(0.4%)
Number of Non-Inpatient Services	12.000	14.300	-15.9%	(0.3%)
Any Primary Care Services	0.744	0.762	-2.4%	(0.1%)
Total RVUs, Primary Care Services	107.000	124.000	-13.9%	(0.3%)
Number of Primary Care Services	4.280	4.690	-8.6%	(0.3%)
Any Preventive Care Services	0.059	0.077	-23.1%	(0.7%)
Total RVUs, Preventive Care Services	1.890	3.020	-37.6%	(1.3%)
Number of Preventive Care Services	0.071	0.118	-39.9%	(2.2%)
Any Hi-Tech Services	0.220	0.258	-14.7%	(0.3%)
Total RVUs, Hi-Tech Services	88.800	107.000	-17.0%	(0.7%)
Number of Hi-Tech Services	0.444	0.577	-23.1%	(0.6%)
Any OBRA89 Overvalued Procedures	0.335	0.407	-17.7%	(0.3%)
Total RVUs, OBRA89 Overvalued Procedures	140.000	160.000	-12.8%	(0.6%)
Number of OBRA89 Overvalued Procedures	0.875	1.160	-24.3%	(0.4%)
Any Services with General/Family Practitioner	0.446	0.354	26.1%	(0.5%)
Any Services with Internist	0.331	0.406	-18.5%	(0.2%)
Any Services with Surgeon	0.435	0.525	-17.0%	(0.4%)
Any Services with Medical Specialist	0.455	0.489	-7.1%	(0.3%)
Any Services with Group/Miscellaneous	0.373	0.454	-17.8%	(0.2%)
Total RVUs with General/Family Practitioner	100.000	75.600	32.3%	(1.2%)
Total RVUs with Internist	107.000	138.000	-23.1%	(0.7%)
Total RVUs with Surgeon	250.000	295.000	-15.5%	(0.6%)
Total RVUs with Medical Specialist	136.000	194.000	-29.7%	(0.3%)
Total RVUs with Group/Miscellaneous	67.700	88.300	-23.3%	(1.0%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-22 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Gains Under the Fee Schedule
Utilization of Visits and Consultations**

	BIG GAINS	OTHER	DIFFERENCE	(S.E.)
Any Primary Care Visits	0.744	0.762	-2.4%	(0.1%)
Total RVUs, Primary Care Visits	107.000	125.000	-14.2%	(0.3%)
Number of Primary Care Visits	4.280	4.690	-8.6%	(0.3%)
Any Office Visits	0.685	0.691	-1.0%	(0.2%)
Total RVUs, Office Visits	88.200	101.000	-12.9%	(0.2%)
Number of Office Visits	3.600	3.900	-7.6%	(0.3%)
Any ER/OPD Visits	0.160	0.180	-11.3%	(0.4%)
Total RVUs, ER/OPD Visits	8.670	11.300	-23.4%	(0.6%)
Number of ER/OPD Visits	0.275	0.342	-19.4%	(0.7%)
Any Consultations	0.137	0.186	-26.3%	(0.4%)
Total RVUs, Consultations	20.800	33.300	-37.5%	(1.4%)
Number of Consultations	0.306	0.467	-34.4%	(1.6%)
Any Primary Care Visits, General/Family Practitioner	0.421	0.331	27.0%	(0.6%)
Any Primary Care Visits, Internist	0.253	0.337	-24.9%	(0.4%)
Any Primary Care Visits, Specialist	0.403	0.472	-14.5%	(0.4%)
Total RVUs, Primary Care Visits, General/Family Practitioner	47.100	36.900	27.5%	(0.9%)
Total RVUs, Primary Care Visits, Internist	25.200	38.300	-34.1%	(0.5%)
Total RVUs, Primary Care Visits, Specialist	34.600	49.500	-30.0%	(0.3%)
Number of Primary Care Visits, General/Family Practitioner	1.930	1.440	34.7%	(0.9%)
Number of Primary Care Visits, Internist	0.996	1.450	-31.1%	(0.5%)
Number of Primary Care Visits, Specialist	1.350	1.810	-25.0%	(0.4%)
Any Consultations with General/Family Practitioner	0.006	0.008	-21.5%	(1.7%)
Any Consultations with Internist	0.046	0.059	-22.0%	(0.6%)
Any Consultations with Specialist	0.109	0.157	-30.2%	(0.6%)
Total RVUs, Consultations with General/Family Practitioner	0.609	0.783	-22.3%	(2.7%)
Total RVUs, Consultations with Internist	5.820	8.390	-30.6%	(1.1%)
Total RVUs, Consultations with Specialist	14.400	24.100	-40.4%	(1.6%)
Number of Consultations with General/Family Practitioner	0.010	0.011	-10.5%	(3.9%)
Number of Consultations with Internist	0.084	0.116	-27.2%	(1.7%)
Number of Consultations with Specialist	0.212	0.340	-37.7%	(1.7%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-22 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Gains Under the Fee Schedule
Utilization of Cardiac Procedures and Selected Surgeries**

	BIG GAINS	OTHER	DIFFERENCE	(S.E.)
Any EKGs	0.303	0.376	-19.4%	(0.3%)
Any Cardiac Ultrasounds	0.032	0.044	-28.6%	(0.8%)
Any Cardiac Catheterizations	0.012	0.015	-19.4%	(2.0%)
Any PCTAs	0.001	0.001	-1.9%	(4.2%) NS
Any CABGs	0.003	0.003	-10.8%	(4.6%)
Total RVUs, EKGs	18.700	27.100	-31.0%	(0.4%)
Total RVUs, Cardiac Ultrasounds	4.820	7.500	-35.6%	(0.7%)
Total RVUs, Cardiac Catheterizations	8.630	10.600	-18.4%	(2.3%)
Total RVUs, PCTAs	1.730	1.730	-0.1%	(4.5%) NS
Total RVUs, CABGs	11.300	12.200	-8.0%	(4.8%) NS
Number of EKGs	0.733	0.990	-26.0%	(0.4%)
Number of Cardiac Ultrasounds	0.046	0.069	-33.5%	(0.9%)
Number of Cardiac Catheterizations	0.016	0.021	-25.2%	(2.1%)
Number of PCTAs	0.001	0.001	-2.1%	(4.4%) NS
Number of CABGs	0.003	0.003	-9.7%	(4.7%)
Any Cataract Lens Surgeries	0.025	0.026	-5.9%	(1.1%)
Any Joint Prostheses	0.005	0.005	7.3%	(2.5%)
Any Cholecystectomies	0.005	0.005	12.3%	(3.5%)
Any Hysterectomies	0.002	0.002	2.8%	(4.1%) NS
Any TURPs	0.008	0.008	-4.5%	(3.6%) NS
Total RVUs, Cataract Lens Surgeries	44.500	47.000	-5.3%	(1.0%)
Total RVUs, Joint Prostheses	13.400	12.400	8.7%	(2.7%)
Total RVUs, Cholecystectomies	5.030	4.450	13.0%	(3.7%)
Total RVUs, Hysterectomies	1.900	1.860	2.1%	(4.6%) NS
Total RVUs, TURPs	8.820	9.270	-4.9%	(3.7%) NS
Number of Cataract Lens Surgeries	0.029	0.031	-5.3%	(1.0%)
Number of Joint Prostheses	0.006	0.006	7.6%	(3.3%)
Number of Cholecystectomies	0.006	0.005	12.5%	(3.7%)
Number of Hysterectomies	0.002	0.002	1.4%	(4.3%) NS
Number of TURPs	0.008	0.008	-4.4%	(3.7%) NS

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

**Table B-22 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Gains Under the Fee Schedule
Endoscopies, Radiology, and Selected Preventive/Diagnostic Services**

	BIG GAINS	OTHER	DIFFERENCE	(S.E.)
Any Lower GI Endoscopies	0.048	0.059	-18.6%	(0.4%)
Any Upper GI Endoscopies	0.020	0.022	-7.5%	(1.3%)
Any Other Endoscopies	0.033	0.036	-8.2%	(0.9%)
Any Arthroscopies	0.001	0.001	-1.3%	(7.4%) NS
Total RVUs, Lower GI Endoscopies	12.100	14.900	-19.1%	(1.0%)
Total RVUs, Upper GI Endoscopies	7.880	8.740	-9.8%	(1.7%)
Total RVUs, Other Endoscopies	9.770	11.100	-12.3%	(1.4%)
Total RVUs, Arthroscopies	1.170	1.160	0.7%	(11.0%) NS
Any Radiology Services	0.470	0.507	-7.2%	(0.3%)
Any CAT Scans	0.073	0.086	-15.0%	(0.7%)
Any MRIs	0.002	0.003	-46.4%	(3.5%)
Any Nuclear Imaging Services	0.049	0.062	-21.8%	(0.9%)
Any Non-Cardiac Ultrasounds	0.070	0.081	-13.1%	(0.6%)
Total RVUs, Radiology Services	74.200	92.500	-19.8%	(0.4%)
Total RVUs, Cat Scans	11.600	14.900	-22.4%	(0.7%)
Total RVUs, MRIs	0.649	1.380	-52.8%	(2.8%)
Total RVUs, Nuclear Imaging Services	4.650	7.050	-34.0%	(0.9%)
Total RVUs, Non-Cardiac Ultrasounds	6.700	8.810	-24.0%	(0.9%)
Any Mammograms	0.035	0.046	-23.1%	(0.7%)
Any Pap Smears	0.020	0.028	-30.3%	(1.4%)
Any Pneumonia Vaccines	0.009	0.011	-15.9%	(1.9%)
Any Influenza Vaccines	0.000	0.000	-39.4%	(10.5%)
Total RVUs, Mammograms	1.590	2.390	-33.2%	(0.9%)
Total RVUs, Pap Smears	0.171	0.254	-32.6%	(1.4%)
Total RVUs, Pneumonia Vaccines	0.119	0.377	-68.4%	(4.3%)
Total RVUs, Influenza Vaccines	0.001	0.003	-43.6%	(9.1%)

Source: PPRC analysis of Medicare BMAD-IV and other data.

Notes: NS signifies differences smaller than two standard errors.

Rates are age-sex adjusted where possible.

Rates (except overall mortality) are per beneficiary-year of enrollment.

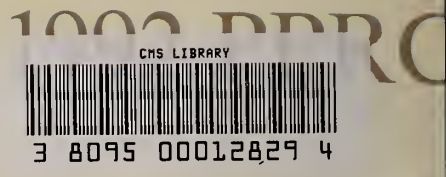
**Table B-22 (continued): Utilization Rates Per Beneficiary, 1986
Beneficiaries in Areas With Largest Gains Under the Fee Schedule
Hospital Outpatient and Inpatient Services and Mortality Rate**

	BIG GAINS	OTHER	DIFFERENCE	(S.E.)
Outpatient Services, Any Hospital				
Any Visit/ER Services	0.167	0.174	-4.4%	(0.3%)
Number of Visits/ER Services	0.372	0.475	-21.7%	(0.8%)
Charges, Visits/ER Services	13.700	22.700	-39.4%	(0.7%)
Charges, All Services	249.000	322.000	-22.5%	(1.1%)
Outpatient Services, Urban Public Hospitals				
Any Visit/ER Services	0.019	0.028	-30.8%	(1.0%)
Number of Visits/ER Services	0.056	0.110	-49.4%	(1.5%)
Charges, Visits/ER Services	2.020	5.500	-63.3%	(1.0%)
Charges, All Services	22.100	29.000	-23.6%	(1.7%)
Outpatient Services, Urban Public High-Medicaid Hospitals				
Any Visit/ER Services	0.008	0.015	-48.8%	(1.2%)
Number of Visits/ER Services	0.025	0.066	-62.4%	(1.7%)
Charges, Visits/ER Services	0.771	2.780	-72.3%	(1.0%)
Charges, All Services	10.400	14.400	-27.6%	(2.1%)
Inpatient Services, Any Hospital				
Discharges, Total	0.350	0.338	3.6%	(0.5%)
Discharges, ACS DRGs	0.077	0.070	10.2%	(0.5%)
Discharges, Low Variation DRGs	0.019	0.016	14.5%	(2.0%)
Admitted Through ER	0.118	0.135	-12.7%	(1.1%)
Outlier, Day or Cost	0.009	0.012	-25.9%	(1.8%)
Discharged Dead	0.022	0.022	1.4%	(2.0%) NS
All Deaths				
Mortality Rate	0.049	0.048	1.7%	(1.1%) NS

Source: PPRC analysis of Medicare MEDPAR, Denominator, and outpatient facility bill data.

Notes: NS signifies differences smaller than two standard errors.
Rates are age-sex adjusted where possible.
Rates (except overall mortality) are per beneficiary-year of enrollment.
Outpatient information on this table reflects facility bills, not physician bills.

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